

Report Number: 214-TRC-03-012

Safety Compliance Testing For FMVSS 214

Side Impact Protection

Indicant

**Toyota Motor Corporation
2004 Lexus RX330 MPV**

NHTSA Number: C45101

Transportation Research Center Inc.

10820 State Route 347

P. O. Box B-67

East Liberty, OH 43319



Test Date: September 24, 2003

Final Report: October 7, 2003

**U. S. Department Of Transportation
National Highway Traffic Safety Administration
Enforcement**

Office of Vehicle Safety Compliance


400 Seventh Street, S. W.

Room No. 6111 (NVS-220)

Washington, DC 20590

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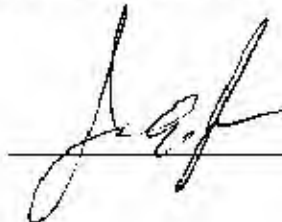
Test Performed By: Christopher Roberts, Engineering Technician

Report Approved By: 

Walter Dudek, Project Manager
Transportation Research Center Inc.

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16. Abstract <p>This 56/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2004 Lexus RX330 MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specifies) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on September 24, 2003.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 62.0 km/h, and the ambient temperature at the struck (Driver's side) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 296 mm at Level 3.</p> <p>The test or target vehicle's performance is given below (with FIR filter):</p> <table border="1"> <thead> <tr> <th></th> <th>Front SID HII</th> <th>Rear SID HII</th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td>27.2 g's</td> <td>58.2 g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td>31.4 g's</td> <td>53.2 g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td>28.4 g's</td> <td>45.5 g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td>29.9 g's</td> <td>51.9 g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td>45.6 g's</td> <td>66.9 g's</td> </tr> </tbody> </table> <p>The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during side impact event.</p>				Front SID HII	Rear SID HII	Left Upper Rib Acceleration:	27.2 g's	58.2 g's	Left Lower Rib Acceleration:	31.4 g's	53.2 g's	Lower Spine Acceleration:	28.4 g's	45.5 g's	Thoracic Trauma Index, (TTI):	29.9 g's	51.9 g's	Pelvis Acceleration (PEV):	45.6 g's	66.9 g's
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Section I

Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2004 Lexus RX330 MPV. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001) (except the test was conducted 8 km/h (5 mph) faster than the standard specifies).

Section 2

Summary of Side Impact Test

A 2004 Lexus RX330 MPV was impacted on the driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.0 km/h (38.5 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on September 24, 2003. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SID HIII) are included in Appendix A.

Two restrained Side Impact Dummies (SID HIII) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). Both SID HIII dummies were certified prior to this test. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID HIIIs were instrumented with the following accelerometers:

1. Head (HEI) triaxial and redundant accelerometers (X, Y, and Z-directions)
2. Neck (NEK) triaxial force and moment load cells (X, Y, and Z-directions)
3. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
5. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact dummy (SID HIII) configuration and verification test data can be found in Appendix C. A total of seventy-two (72) channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following tables summarize the results of the test:

Injury Criteria	Front SID HIII	Rear SID HIII
ITl (g)	29.9	51.9
PEV (g)	45.6	66.9

Head Injury Criteria (HIC)

Injury Criteria	Front SID HIII	Rear SID HIII
HIC	87	301
t_1 (ms)	44.40	53.04
t_2 (ms)	76.72	73.28
Average Acceleration $t_1 - t_2$ (g)	23.6	46.6

HIC is as defined in FMVSS 208. The maximum time interval t_1 to t_2 is 36 ms.

Neck Injury Criteria

Maximum Values	Front SID HIII	Rear SID HIII
Neck X-axis Force (N)	-243	364
Neck Y-axis Force (N)	-193	-714
Neck Z-axis Force (N)	973	-798
Moment About X-axis (Nm) ¹	-43.5	-88.1
Moment About Y-axis (Nm)	-39.0	-35.3
Moment About Z-axis (Nm)	22.7	18.9

¹ Calculated about the occipital condyle with the following formula: $M_{occ} = M_x + 0.01778F_y$.

Data Acquisition Explanations

The vehicle's left side sill at front seat Y-axis acceleration channel, LFSYG1, exceeded full-scale at approximately 15 milliseconds and recorded no useful data afterwards. The calculated left side sill at front seat velocity, displacement, and resultant were also affected.

The vehicle's right side sill at front seat X-axis acceleration channel, RFSXG1, recorded no useful data after approximately 16 milliseconds. The calculated right side sill at front seat velocity was also affected.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2004 Lexus RX330
Vehicle Body Style/Color: MPV/Breakwater Blue Metallic VIN: JTJGA31U940011659
Vehicle NHTSA No.: C45101 Build Date: 06/03
Engine Data: 6 Cylinders; CID; 3.3 Liters; cc
Placement: - Longitudinal; or X Lateral; or - Horizontal
Transmission: 5 Speed; - Manual; X Automatic; - Overdrive
Final Drive: - RWD; X FWD; - Four-Wheel Drive
Odometer Reading: 151 mi (243 km)
Options: X A/C; X Power steering; X Pwr. brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)* 210 kPa Front; 210 kPa Rear
Recommended Tire Size: 225/65R17
Tires on Test Vehicle: P225/65R17 Manufacturer: Michelin, Energy

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; N/A 3rd seat; 5 Total
Type of Front Seats: X Bucket; - Bench; - Split bench
Type of Front Seat Back: - Fixed; X Adjustable with - Lever or X Knob
Vehicle Max. Capacity Loading = 420 kg (A)
No. of Occupants x 68.04 kg. = 340 kg (B)
Vehicle Cargo Capacity (A-B) = 80 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>534.5</u> kg	Left Rear	=	<u>356.0</u> kg
Right Front	=	<u>484.5</u> kg	Right Rear	=	<u>366.0</u> kg
Total Front	=	<u>1019.0</u> kg	Total Rear	=	<u>722.0</u> kg
Front % of Total Weight	=	<u>58.5</u> %	Rear % of Total Weight	=	<u>41.5</u> %
Total Weight	=	<u>1741.0</u> kg			

* Tire pressure used in test.

Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids = 1741 kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle = 80 kg (B)
Weight of Instrumented Side Impact Dummies (2 X 84.0 kg) = 168 kg (C)
Test Vehicle Target Weight: = 1989 kg (A+B-C)

Fully Loaded Test Vehicle (UDW + 2 SID IIII s + Cargo):

Left Front	=	<u>584.5</u> kg	Left Rear	=	<u>474.5</u> kg
Right Front	=	<u>486.5</u> kg	Right Rear	=	<u>440.0</u> kg
Total Front	=	<u>1071.0</u> kg	Total Rear	=	<u>914.5</u> kg
Front % of Total Weight	=	<u>53.9</u> %	Rear % of Total Weight	=	<u>46.1</u> %
Total Weight	=	<u>1985.5</u> kg			

As Tested Weight of Test Vehicle (2 SID IIII s + Cargo + Equipment & Instrumentation):

Left Front	=	<u>572.6</u> kg	Left Rear	=	<u>463.5</u> kg
Right Front	=	<u>512.4</u> kg	Right Rear	=	<u>433.0</u> kg
Total Front	=	<u>1085.0</u> kg	Total Rear	=	<u>896.5</u> kg
Front % of Total Weight	=	<u>54.8</u> %	Rear % of Total Weight	=	<u>45.2</u> %
Total Weight	=	<u>1981.5</u> kg			

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>828</u>	Right Front <u>817</u>	Right Front <u>818</u>
Left Front <u>820</u>	Left Front <u>808</u>	Left Front <u>810</u>
Right Rear <u>819</u>	Right Rear <u>785</u>	Right Rear <u>792</u>
Left Rear <u>816</u>	Left Rear <u>775</u>	Left Rear <u>781</u>

Test Vehicle Wheelbase: 2715 mm

C.G. = 1227 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4448 mm
Left Side = 4450 mm
Centerline = 4725 mm

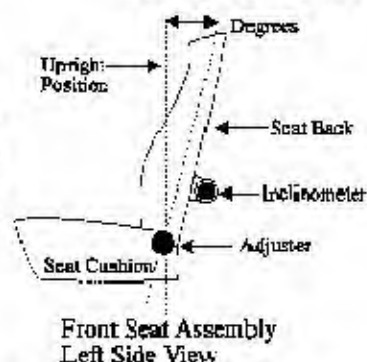
Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Front Seat Cushion Placement: Mid; 4.7" rearward from the foremost position

Total Length of Fore/Aft Adjustment Travel: 240 mm

Total Number of Adjustment Positions or Detents: N/A

Front Seat Back Adjustment Position: The seat back was adjusted to 87° measured at the headrest bar line

Seat Back Torso Angle: 3.3 degrees

Second Position Seat Placement: Mid; 4 notches rearward from foremost position

Total Length Of Fore/Aft Adjustment Travel: 124 mm

Seat Back Adjustment Position: The seat back was adjusted to 2 notches rearward from the most upright position

Adjustable Steering Column Position: 4 notches downward from the most upright position

Window Positions:

Right Front: Open

Right Rear: Open

Left Front: Closed

Left Rear: Closed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Amount of Stoddard Solvent In Fuel Tank:

72.5 liters (fuel tank usable capacity)

67.6 liters used in test (92% - 94% of fuel tank usable capacity)

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2715 millimeters

Intended impact point is 417 millimeters rearward of front axle centerline (which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 438 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2004/Lexus/RX330

Body Style: MPV

VIN: JTJGA31U940011659

NHTSA No.: C45101

Build Date: 06/03

Test Date: 09/24/03

Vehicle Overall Length = 4725 mm

Overall Width = 1820 mm

Vehicle Test Weight (Pre-Test):

Left Front = 572.6 kg Left Rear = 463.5 kg

Right Front = 512.4 kg Right Rear = 433.0 kg

Total Front = 1085.0 kg Total Rear = 896.5 kg

Total Weight = 1981.5 kg

Wheelbase = 2715 mm

Longitudinal C.G. From Center Of Front Axle = 1227 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 21 mm right of nominal impact ref. line (Lateral)

Actual Impact Point is 0 mm from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (340 mm above ground) = 85 mm

2. Level 2 (711 mm above ground) = 290 mm

3. Level 3 (750 mm above ground) = 296 mm

4. Level 4 (1080 mm above ground) = 193 mm

5. Level 5 (1630 mm above ground) = 33 mm

Maximum Post-Test Intrusion = 296 mm

Occupants:

Front Passenger

Rear Passenger

Dummy Identification 055 906

Restraints Used 3-pt. seat belt, side curtain airbag, 3-pt. seat belt, side curtain airbag
side torso airbag

Instrumentation:

Number of Vehicle Data Channels: - 21

Number of Cameras: Onboard = 3 Offboard = 8 Total = 11

Data Sheet 3

Moving Deformable Barrier(MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 033A0303 024A0403

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage	=	<u>1251</u>	mm
Overall Length of MDB (Incl. honeycomb impact face)	=	<u>4014</u>	mm
Wheelbase of Framework Carriage	=	<u>2591</u>	mm
Track of Framework Carriage (Front & Rear)	=	<u>1881</u>	mm
C.G. Location Rearward of Front Axle	=	<u>1138</u>	mm

MDB Weight:

Left Front	=	<u>419.6</u>	kg	Left Rear	=	<u>254.4</u>	kg
Right Front	=	<u>342.2</u>	kg	Right Rear	=	<u>342.6</u>	kg
Total Front	=	<u>761.8</u>	kg	Total Rear	=	<u>597.0</u>	kg
Total MDB Weight	=	<u>1358.8</u>	kg				

Impact Angle (MDB C/L to Target Vehicle C/L) = 90 degrees

Impact Speed - 62.0 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level	=	<u>161</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>82</u>	millimeters
3. Row C at Mid Level ¹	=	<u>107</u>	millimeters
4. Row D at Top of Stack Level	=	<u>137</u>	millimeters

Instrumentation:

Number of MDB Data Channels = 5

¹ Row C at Mid Level pre-test measurements were not collected prior to impact. Pre-test measurements from a second barrier face were used to determine difference.

Data Sheet 4

Post-Test Observations

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Visible Dummy Contact Points:

	<u>Left Front SID HII</u>	<u>Left Rear SID HII</u>
Head:	<u>Airbag, head restraint</u>	<u>Airbag, head liner</u>
Upper Torso:	<u>Torso airbag</u>	<u>Door panel</u>
Lower Torso:	<u>None</u>	<u>None</u>
Left Knee:	<u>Door panel</u>	<u>Door panel</u>
Right Knee:	<u>None</u>	<u>None</u>

Door Opening:

	<u>Left Side</u>	<u>Right Side</u>
Front:	<u>Jammed and latched</u>	<u>Easy</u>
Rear:	<u>Jammed and latched</u>	<u>Easy</u>

MDB Distance From Target Impact Point:

Vertical: 0 mm from target

Horizontal: 21 mm right from target

Arm Rest Locations:

Front: 240 mm below the bottom of the window

Rear: 273 mm below the bottom of the window

Seat Movement:

Front: None

Rear: None

Glazing Damage:

Windshield: _____

Window: Left rear window broken

Pillar Separation: None

Sill Separation: None

Other Notable Impact Effects:

None

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID III Instrumentation Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924

DRIVER DUMMY SERIAL NUMBER: 055

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	2.7 g	@ 205.6 ms	16.4 g	@ 62.6 ms
LATERAL	29.0 g	@ 57.0 ms	3.4 g	@ 105.6 ms
VERTICAL	10.6 g	@ 57.4 ms	5.5 g	@ 65.7 ms
RESULTANT	33.5 g	@ 57.4 ms		
HIC	87 from 44.4 to 76.7 ms			

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	2.8 g	@ 206.6 ms	16.3 g	@ 62.6 ms
LATERAL	29.4 g	@ 57.0 ms	3.4 g	@ 102.2 ms
VERTICAL	10.4 g	@ 57.4 ms	5.5 g	@ 65.8 ms
RESULTANT	33.6 g	@ 57.4 ms		
HIC	88 from 44.6 to 76.7 ms			

NECK FORCE

X-AXIS SHEAR	87.3 N	@ 39.7 ms	243.2 N	@ 63.2 ms
Y-AXIS SHEAR	157.8 N	@ 62.6 ms	192.5 N	@ 94.7 ms
Z-AXIS AXIAL	973.5 N	@ 57.2 ms	91.7 N	@ 115.4 ms

NECK MOMENT

ABOUT X-AXIS	9.6 N-m	@ 151.6 ms	45.9 N-m	@ 57.9 ms
ABOUT Y-AXIS	6.9 N-m	@ 139.6 ms	39.0 N-m	@ 63.1 ms
ABOUT Z-AXIS	22.7 N-m	@ 82.2 ms	6.4 N-m	@ 297.3 ms
OCCIPITAL COND	10.6 N-m	@ 151.7 ms	43.5 N-m	@ 57.8 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	27.2 g	@ 53.7 ms	7.3 g	@ 40.0 ms
LATERAL (R)	27.0 g	@ 53.7 ms	7.2 g	@ 40.0 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	31.4 g	@ 16.9 ms	4.9 g	@ 78.1 ms
LATERAL (R)	31.3 g	@ 16.9 ms	5.1 g	@ 78.1 ms
TTI d (P)	29.9			
TTI d (R)	29.5			

LOWER SPINE ACCELERATION

LATERAL (P)	28.4 g	@ 43.8 ms	9.3 g	@ 57.5 ms
LATERAL (R)	27.7 g	@ 43.8 ms	5.1 g	@ 58.1 ms

PELVIS ACCELERATION

LATERAL (P)	45.6 g	@ 35.0 ms	13.7 g	@ 62.5 ms
LATERAL (R)	45.6 g	@ 35.0 ms	13.7 g	@ 62.5 ms

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

Data Sheet 5 (Continued)

SID HIT Instrumentation Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924

PASSENGER DUMMY SERIAL NUMBER: 906

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	8.0 g	@ 203.9 ms	10.3 g	@ 70.9 ms
LATERAL	46.5 g	@ 66.1 ms	7.1 g	@ 88.6 ms
VERTICAL	16.8 g	@ 43.6 ms	39.2 g	@ 64.1 ms
RESULTANT	60.8 g	@ 64.0 ms		
HIC	301 from 53.0 to 73.3 ms			

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	8.1 g	@ 206.2 ms	9.3 g	@ 71.2 ms
LATERAL	48.2 g	@ 65.7 ms	6.9 g	@ 88.2 ms
VERTICAL	16.2 g	@ 43.6 ms	38.9 g	@ 64.4 ms
RESULTANT	61.1 g	@ 64.3 ms		
HIC	310 from 53.3 to 73.1 ms			

NECK FORCE

X-AXIS SHEAR	364.3 N	@ 83.3 ms	123.1 N	@ 149.5 ms
Y-AXIS SHEAR	145.9 N	@ 153.3 ms	713.7 N	@ 80.3 ms
Z-AXIS AXIAL	682.4 N	@ 43.7 ms	798.4 N	@ 63.8 ms

NECK MOMENT

ABOUT X-AXIS	14.6 N-m	@ 83.3 ms	86.3 N-m	@ 61.4 ms
ABOUT Y-AXIS	12.2 N-m	@ 112.3 ms	35.3 N-m	@ 69.2 ms
ABOUT Z-AXIS	18.9 N-m	@ 82.5 ms	8.5 N-m	@ 243.4 ms
OCCIPITAL COND	15.4 N-m	@ 159.2 ms	88.1 N-m	@ 60.6 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	58.2 g	@ 51.3 ms	4.0 g	@ 112.5 ms
LATERAL (R)	57.1 g	@ 51.3 ms	4.3 g	@ 112.5 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	53.9 g	@ 50.0 ms	6.0 g	@ 76.9 ms
LATERAL (R)	52.5 g	@ 50.0 ms	5.8 g	@ 112.5 ms
TTI d (P)	51.9			
TTI d (R)	51.1			

LOWER SPINE ACCELERATION

LATERAL (P)	45.5 g	@ 40.6 ms	5.0 g	@ 73.1 ms
LATERAL (R)	45.0 g	@ 40.6 ms	4.8 g	@ 72.5 ms

PELVIS ACCELERATION

LATERAL (P)	66.9 g	@ 38.8 ms	13.9 g	@ 60.0 ms
LATERAL (R)	67.1 g	@ 38.8 ms	13.8 g	@ 60.0 ms

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

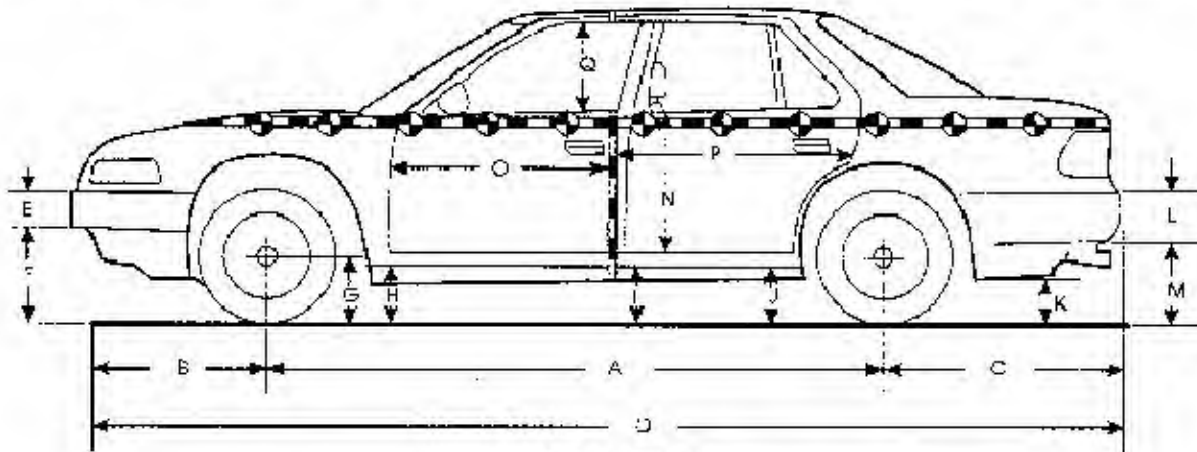
LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Left Side View

Note: All dimensions are in millimeters with tolerance of ± 3 mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2715	2715	2700	15
B	970	970	970	0
C	1040	1040	1040	0
D	4725	4725	4726	-1
E	185	185	185	0
F	502	504	530	-26
G	340	340	340	0
H	305	330	383	-53
I	325	326	392	-66
J1	270	240	257	-17
J2	290	290	362	-72
K	360	328	319	9
L	310	310	310	0
M	420	385	378	7
N	835	835	755	80
O	784	784	730	54
P	1366	1366	1300	66
Q	460	460	460	0
R	4448	4448	4433	15
S	4450	4450	4392	58
T	1405	1405	1275	130

D = Length at centerline
T = Width at B-pillar

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

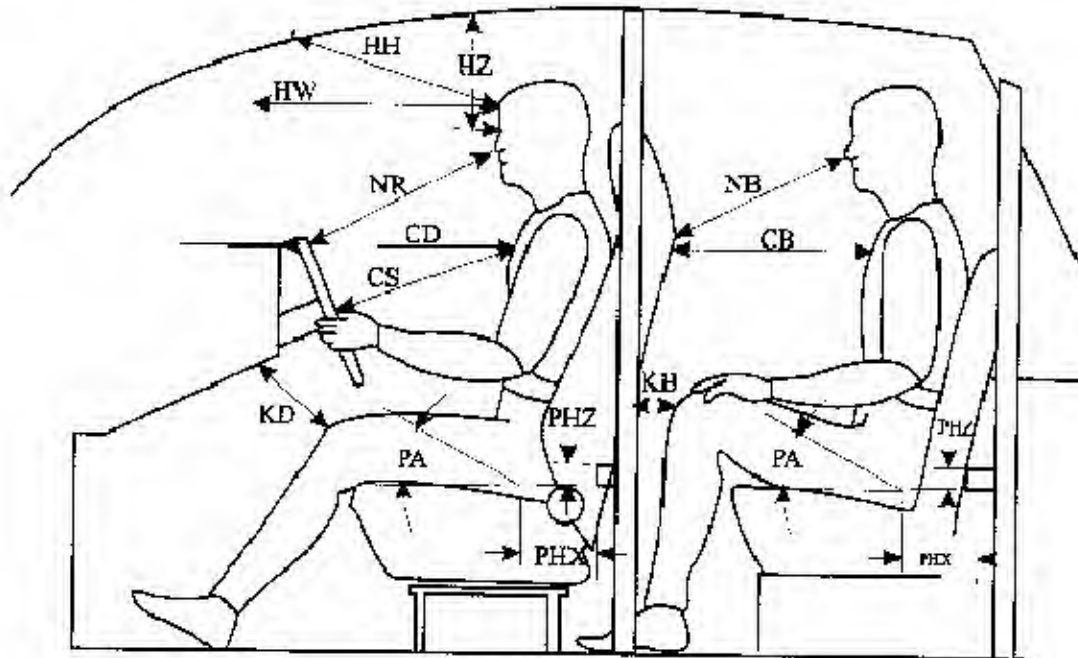
S = Left Side Length

Data Sheet 7

SID III Longitudinal Clearance Dimensions

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Left Side View

Note: All measurements are in millimeters with tolerance of ± 3 mm

Measurement	Driver SID III # 055	Left Rear Pass. SID III # 906
HH	473	N/A
HW	718	N/A
HZ	190	195
NR/NB	508	663
CD/CB	603	542
CS	361	N/A
KDL(KDA°)/KBL(KBA°)	90/(66.6°)	163/(89.9°)
KDR(KDA°)/KBR(KBA°)	73/(53.0°)	173/(86.7°)
PA°	23.3°	24°
PHX	212	348
PHZ	245	342

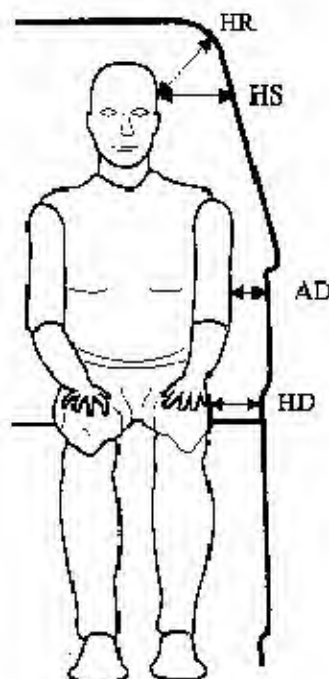
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID HIII Lateral Clearance Dimensions

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Note: All measurements are in millimeters with tolerance of ± 3 mm

Measurement	Driver SID HIII # 55	Left Rear Pass. SID HIII # 906
HR	190	215
HS	296	334
AD*	Lower: 119 Upper: 96	Lower: 123 Upper: 101
HD	167	138

* Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

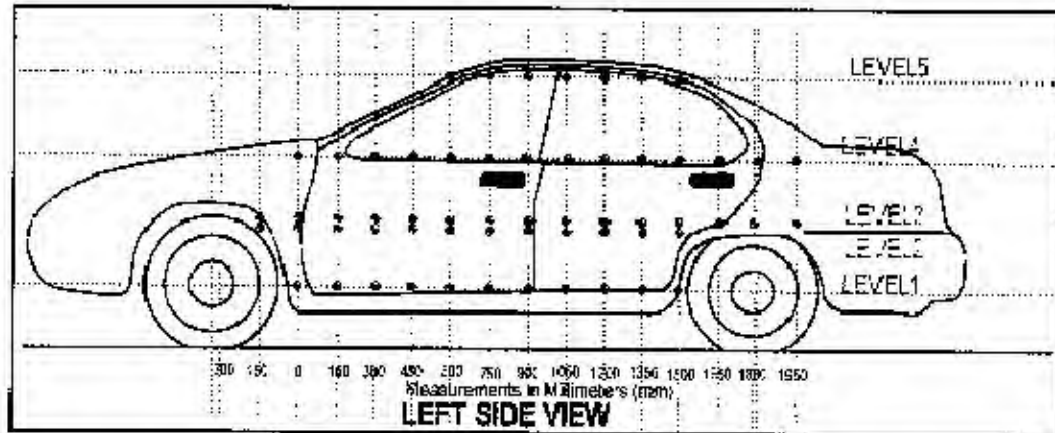
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

Measurements Are Taken When The Vehicle Is In The "As Tested" Configuration.

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1630</u>	mm
Level 4 @ Window Sill	=	<u>1080</u>	mm
Level 3 @ Mid Door	=	<u>750</u>	mm
Level 2 @ Occupant H-Point	=	<u>711</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>340</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Location	Height	(mm) From Impact Point														
		-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	
Level 1 Side Sill	Pre	---	---	---	---	---	---	---	---	---	659	664	665	665	664	
	Post	---	---	---	---	---	---	---	---	---	740	747	750	748	746	
	Crush	---	---	---	---	---	---	---	---	---	81	83	85	83	82	
Level 2 H-Point	Pre	---	664	625	600	---	---	590	---	580	596	596	587	586	585	
	Post	---	659	625	603	---	---	---	---	621	771	836	855	862	865	
	Crush	---	-5	0	3	---	---	---	---	41	175	240	268	276	280	
Level 3 Mid-Door	Pre	---	681	632	600	---	---	---	---	588	596	595	590	588	589	
	Post	---	680	634	605	---	---	---	---	613	767	835	857	868	876	
	Crush	---	-1	2	5	---	---	---	---	25	171	240	267	280	287	
Level 4 Window Sill	Pre	---	---	---	745	720	705	691	685	670	660	652	640	635	625	
	Post	---	---	---	743	724	710	700	693	690	690	705	718	726	732	
	Crush	---	---	---	-2	4	5	9	8	20	30	53	78	91	107	
Level 5 Window Top	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	905	
	Post	---	---	---	---	---	---	---	---	---	---	---	---	---	931	
	Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	26	

Data Sheet 10 (Continued)

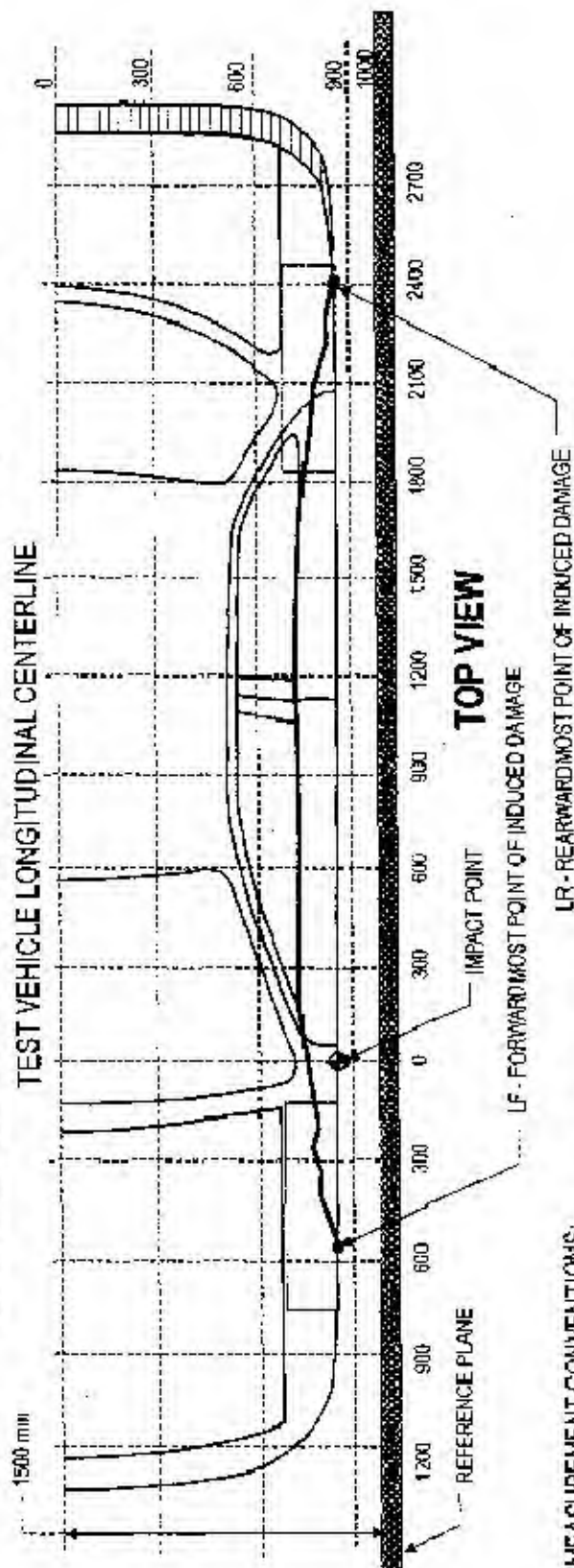
Vehicle Exterior Crush Profiles - All Levels

NHTSA No.: C45101

Vehicle: 2004 Lexus RX330 MPV

Location	Height		(mm) From Impact Point														
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700		
Level 1 Side Sill	340	Pre	665	665	667	665	667	665	665	---	---	---	---	---	---	---	---
		Post	742	743	740	737	738	740	738	---	---	---	---	---	---	---	---
		Crush	77	78	73	72	71	75	73	---	---	---	---	---	---	---	---
Level 2 H-Point	711	Pre	582	580	581	580	583	585	590	590	---	---	---	---	600	---	---
		Post	867	862	832	869	873	871	850	710	---	---	---	---	620	---	---
		Crush	285	282	251	289	290	286	260	120	---	---	---	---	20	---	---
Level 3 Mid-Door	750	Pre	588	587	588	590	590	594	590	585	---	---	---	---	600	---	---
		Post	877	871	843	881	886	885	849	727	---	---	---	---	620	---	---
		Crush	289	284	255	291	296	291	259	142	---	---	---	---	20	---	---
Level 4 Window Sill	1080	Pre	620	615	612	610	610	610	610	602	600	621	630	639	650	---	---
		Post	739	745	760	775	803	779	750	714	651	671	690	676	633	---	---
		Crush	119	130	148	165	193	169	140	112	51	50	60	37	-17	---	---
Level 5 Window Top	1630	Pre	895	885	885	882	882	882	880	888	894	900	908	---	---	---	---
		Post	928	911	915	915	905	901	900	899	901	906	916	---	---	---	---
		Crush	33	26	30	33	23	19	20	11	7	6	8	---	---	---	---

NOTE: All measurements are in millimeters (mm) and should be accurate to plus or minus 3mm.



MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-)

Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Post-Test (mm)	Pre-Test (mm)	Static Crush (mm)
6: LF = 0 mm (Level 2)	621	580	41
5: 600 mm (Level 3)	868	588	280
4: 900 mm (Level 3)	877	588	289
3: 1200 mm (Level 3)	846	588	258
2: 1500 mm (Level 3)	886	590	296
1: LR = 2100 mm (Level 4)	651	600	51

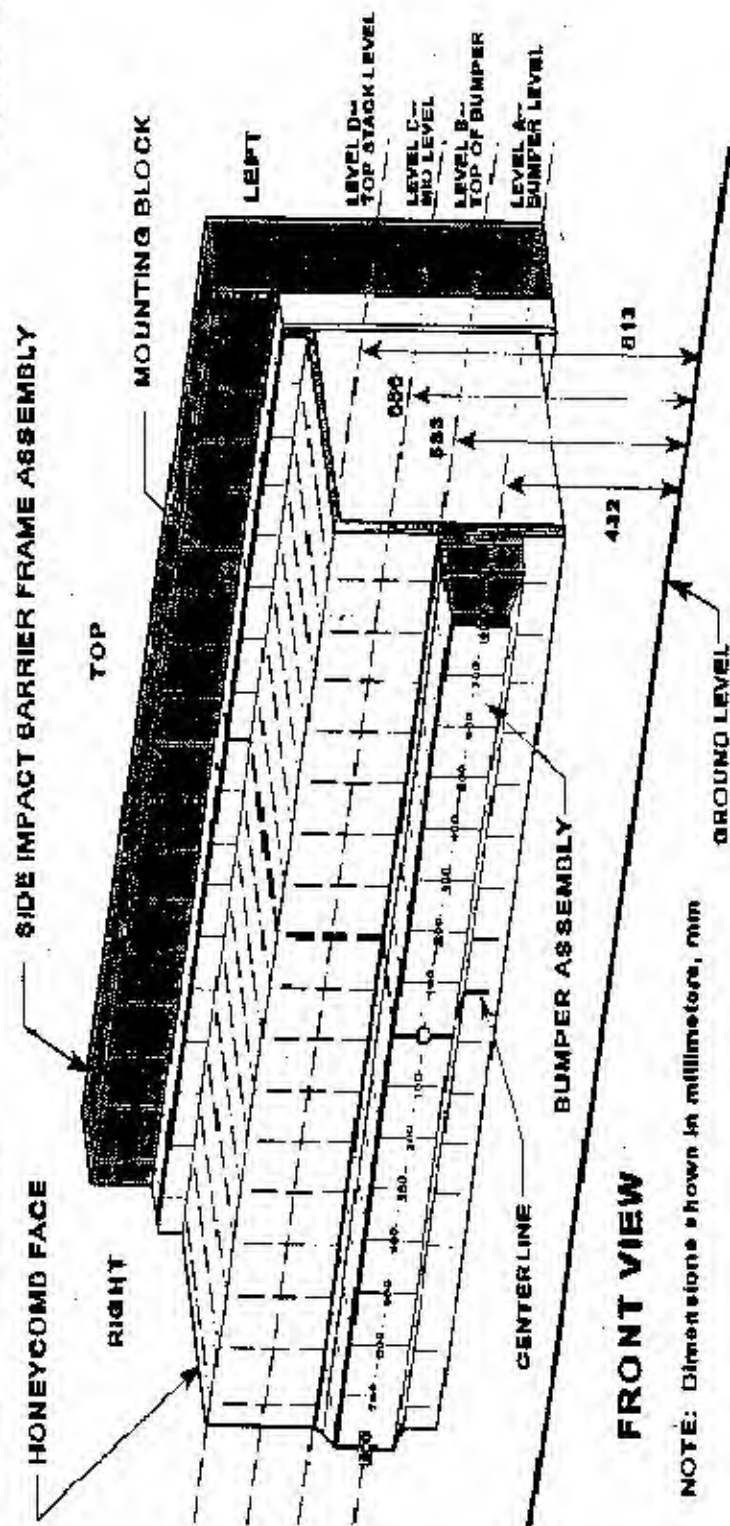
Full length of induced damage was 0 to 2100 mm.

Exterior Static Crush For Impact Face

(Grid as looking at MLD from front)

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

		Distance Right of Center (mm)										Distance Left of Center (mm)							
		Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Location																			
Top Stack Level - Level D	811	-36	-26	-17	-16	-24	-37	-57	-52	-42	-45	-48	-51	-57	-71	-85	-93	-137	
Mid Level Level C ¹	N/A	-21	-18	-14	-14	-19	-32	-53	-32	-20	-14	-14	-16	-50	-27	-42	-59	-107	
Top Bumper Level - Level B	557	-76	-72	-67	-65	-60	-59	-62	-64	-67	-68	-64	-65	-67	-69	-71	-76	-82	
Mid Bumper Level - Level A	432	-153	-161	-155	-150	-145	-144	-144	-144	-144	-146	-146	-147	-148	-149	-150	-156	-160	

All measurements are in millimeters and have a tolerance of ± 3 mm.

¹ Pre-test measurement height not recorded.

Data Sheet 12 (Continued)
Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NIHTSA No.: C45101

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-380	801	-45
2	-380	701	-46
3	-381	601	-46
4	-380	500	-47
5	-381	401	-46
6	-381	300	-47
7	-381	200	-47
8	-381	100	-47
9	-382	0	-48
10	-382	-100	-48
11	-382	-200	-48
12	-382	-300	-48
13	-382	-400	-48
14	-382	-500	-49
15	-382	-600	-49
16	-382	-700	-49
17	-382	-800	-49

Post-Test

Index	Xmm	Ymm	Zmm
1	-344	748	-99
2	-355	650	-111
3	-364	551	-117
4	-365	453	-112
5	-357	355	-105
6	-345	256	-97
7	-325	159	-98
8	-330	60	-96
9	-340	-38	-95
10	-337	-138	-99
11	-334	-237	-96
12	-331	-336	-88
13	-325	-434	-81
14	-311	-532	-76
15	-297	-631	-70
16	-289	-730	-60
17	-246	-817	-64

Difference

Index	Xmm	Ymm	Zmm
1	-36	53	53
2	-26	51	65
3	-17	50	71
4	-16	48	65
5	-24	46	59
6	-37	44	51
7	-57	42	51
8	-52	40	49
9	-42	38	47
10	-45	38	51
11	-48	37	48
12	-51	36	40
13	-57	34	33
14	-71	32	28
15	-85	31	21
16	-93	30	11
17	-137	17	15

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level¹

Pre-Test

Index	Xmm	Ymm	Zmm
18	-376	801	-165
19	-377	701	-165
20	-377	601	-166
21	-377	501	-167
22	-379	401	-167
23	-379	301	-168
24	-378	201	-168
25	-381	101	-169
26	-379	0	-170
27	-378	-100	-170
28	-379	-200	-171
29	-380	-299	-171
30	-381	-399	-172
31	-380	-499	-173
32	-381	-599	-174
33	-381	-700	-175
34	-382	-800	-176

Post-Test

Index	Xmm	Ymm	Zmm
18	-354	752	-241
19	-359	655	-240
20	-363	556	-237
21	-363	456	-234
22	-360	356	-230
23	-347	257	-223
24	-326	157	-222
25	-349	57	-218
26	-359	-43	-216
27	-364	-143	-213
28	-365	-243	-210
29	-364	-343	-207
30	-361	-442	-203
31	-353	-542	-199
32	-339	-641	-193
33	-322	-739	-185
34	-275	-831	-190

Difference

Index	Xmm	Ymm	Zmm
18	-21	49	76
19	-18	46	74
20	-14	45	71
21	-14	45	67
22	-19	45	63
23	-32	44	56
24	-53	45	54
25	-32	44	49
26	-20	44	46
27	-14	43	43
28	-14	42	39
29	-16	44	36
30	-20	43	31
31	-27	43	26
32	-42	42	20
33	-59	40	10
34	-107	31	14

¹ Row C at Mid Level pre-test measurements were not collected prior to impact. Pre-test measurements from a second barrier face were used to determine difference.

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Deformable Barrier Face Profile Cont'd.

Level B - Top of Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
35	-380	800	-299
36	-381	700	-299
37	-381	599	-300
38	-381	500	-300
39	-381	400	-300
40	-381	300	-301
41	-381	200	-301
42	-382	100	-301
43	-381	0	-301
44	-382	-100	-301
45	-382	-200	-302
46	-382	-300	-302
47	-382	-400	-302
48	-383	-500	-302
49	-382	-600	-302
50	-382	-700	-302
51	-382	-800	-303

Post-Test

Index	Xmm	Ymm	Zmm
35	-305	752	-314
36	-308	651	-307
37	-314	550	-313
38	-316	450	-320
39	-321	347	-324
40	-322	254	-325
41	-319	155	-325
42	-317	56	-322
43	-314	-51	-318
44	-314	-147	-316
45	-318	-249	-309
46	-317	-349	-305
47	-315	-450	-302
48	-314	-549	-300
49	-311	-650	-297
50	-307	-750	-294
51	-300	-850	-293

Difference

Index	Xmm	Ymm	Zmm
35	-76	48	15
36	-72	49	8
37	-67	49	14
38	-65	50	20
39	-60	52	24
40	-59	46	24
41	-62	45	24
42	-64	44	21
43	-67	51	16
44	-68	47	15
45	-64	49	7
46	-65	49	4
47	-67	50	-1
48	-69	50	-3
49	-71	50	-5
50	-76	50	-8
51	-82	50	-9

Data Sheet 12 (Continued)

Exterior Static Crush For Impact Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-474	798	-425
53	-484	700	-424
54	-484	601	-425
55	-485	501	-425
56	-485	400	-425
57	-485	300	-426
58	-485	201	-426
59	-485	101	-427
60	-485	0	-427
61	-485	-101	-428
62	-486	-200	-427
63	-485	-300	-428
64	-486	-400	-428
65	-486	-501	-428
66	-486	-600	-428
67	-486	-700	-429
68	-476	-799	-428

Post-Test

Index	Xmm	Ymm	Zmm
52	-321	778	-452
53	-323	649	-453
54	-330	550	-456
55	-335	450	-458
56	-340	349	-461
57	-341	249	-460
58	-341	150	-460
59	-341	50	-459
60	-341	-52	-459
61	-340	-152	-457
62	-340	-251	-456
63	-338	-351	-455
64	-338	-451	-454
65	-337	-551	-453
66	-336	-651	-451
67	-330	-751	-448
68	-316	-849	-440

Difference

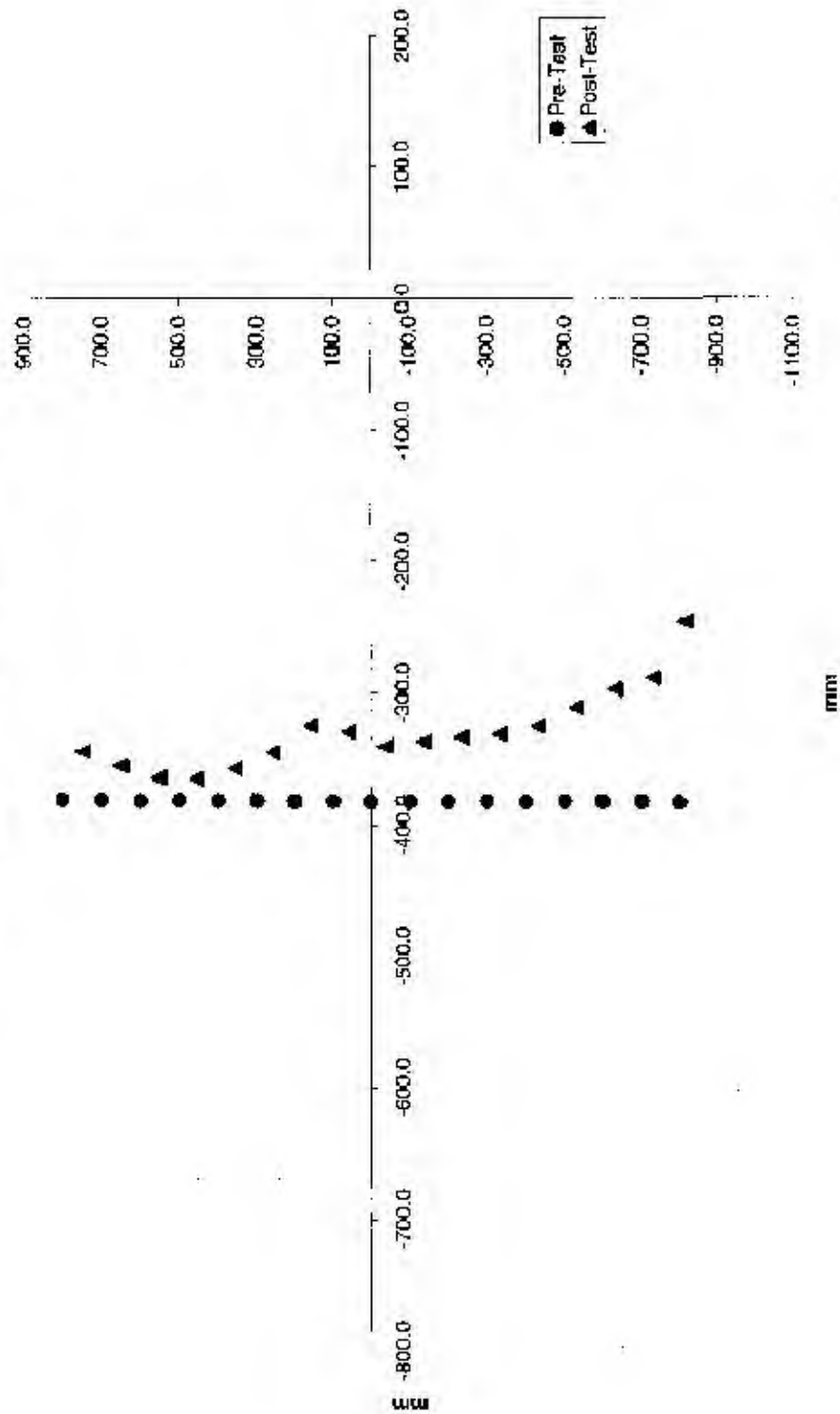
Index	Xmm	Ymm	Zmm
52	-153	20	27
53	-161	52	28
54	-155	52	32
55	-150	51	34
56	-145	51	35
57	-144	51	35
58	-144	51	34
59	-144	51	32
60	-144	51	32
61	-146	51	30
62	-146	51	28
63	-147	51	27
64	-148	51	26
65	-149	51	25
66	-150	51	23
67	-156	51	19
68	-160	50	12

Data Sheet 12 (Continued)
Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Level D - Deformable Barrier Face Profile 1-17



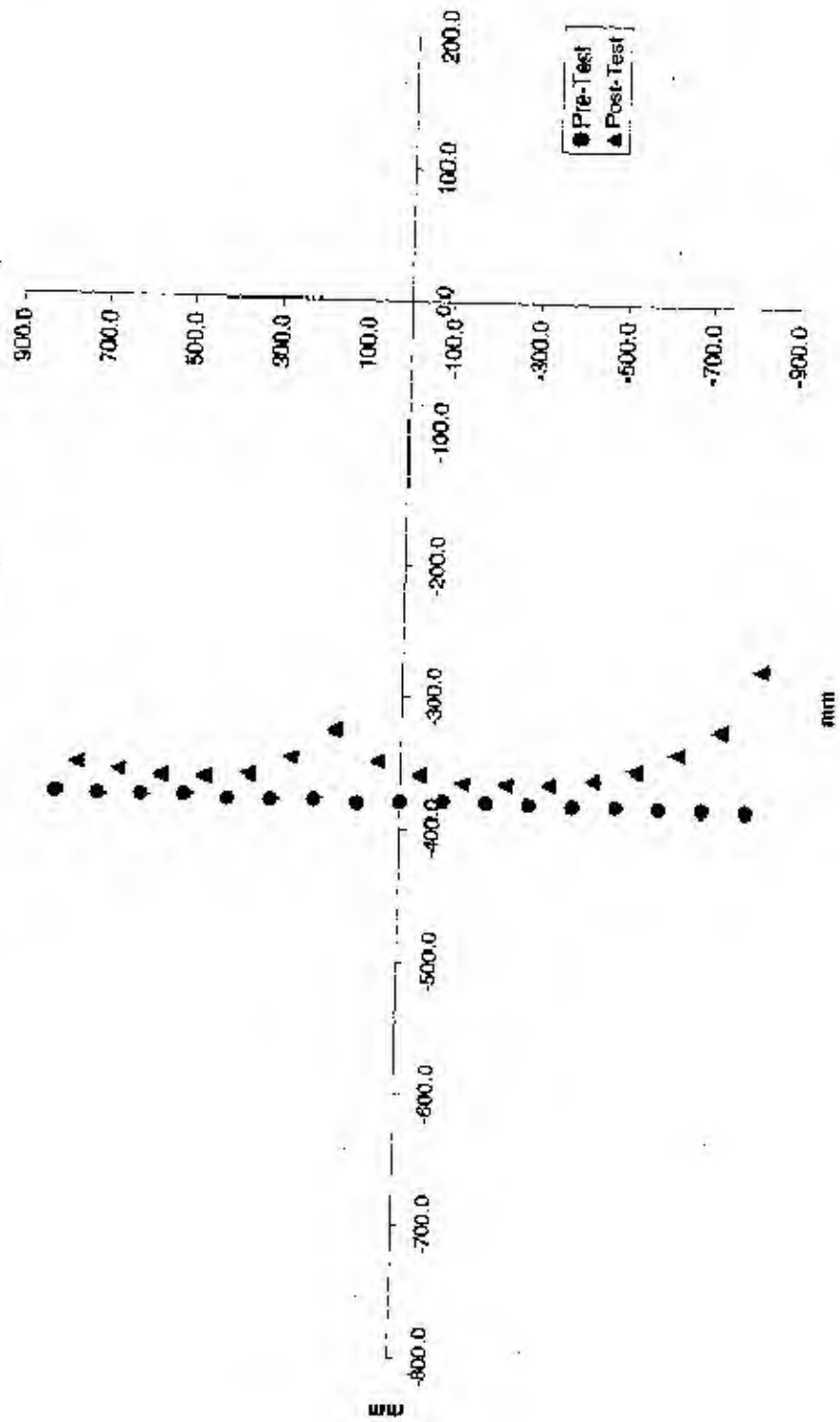
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

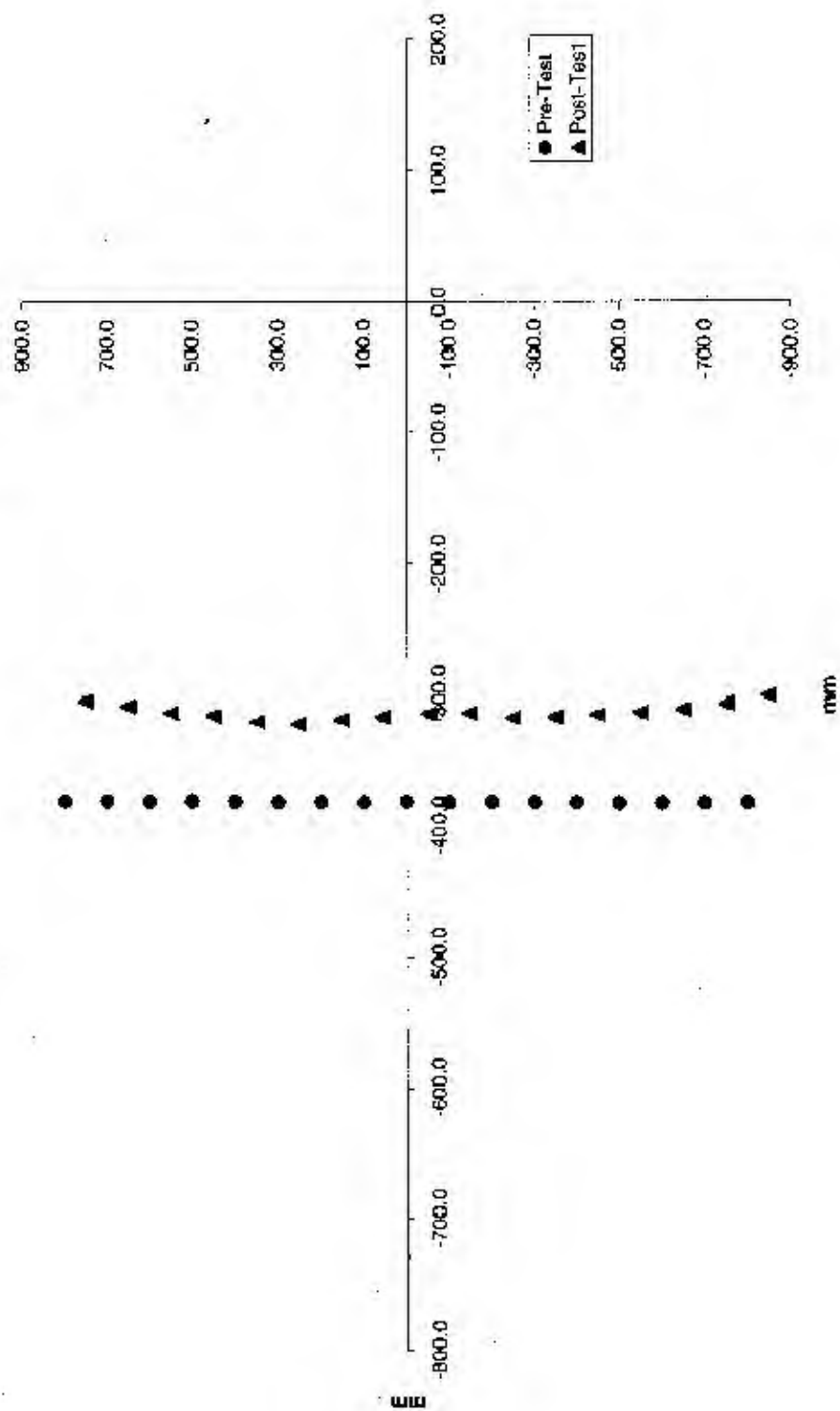
Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Level C - Deformable Barrier Face Profile 18-34



Level B - Deformable Barrier Face Profile 35-51



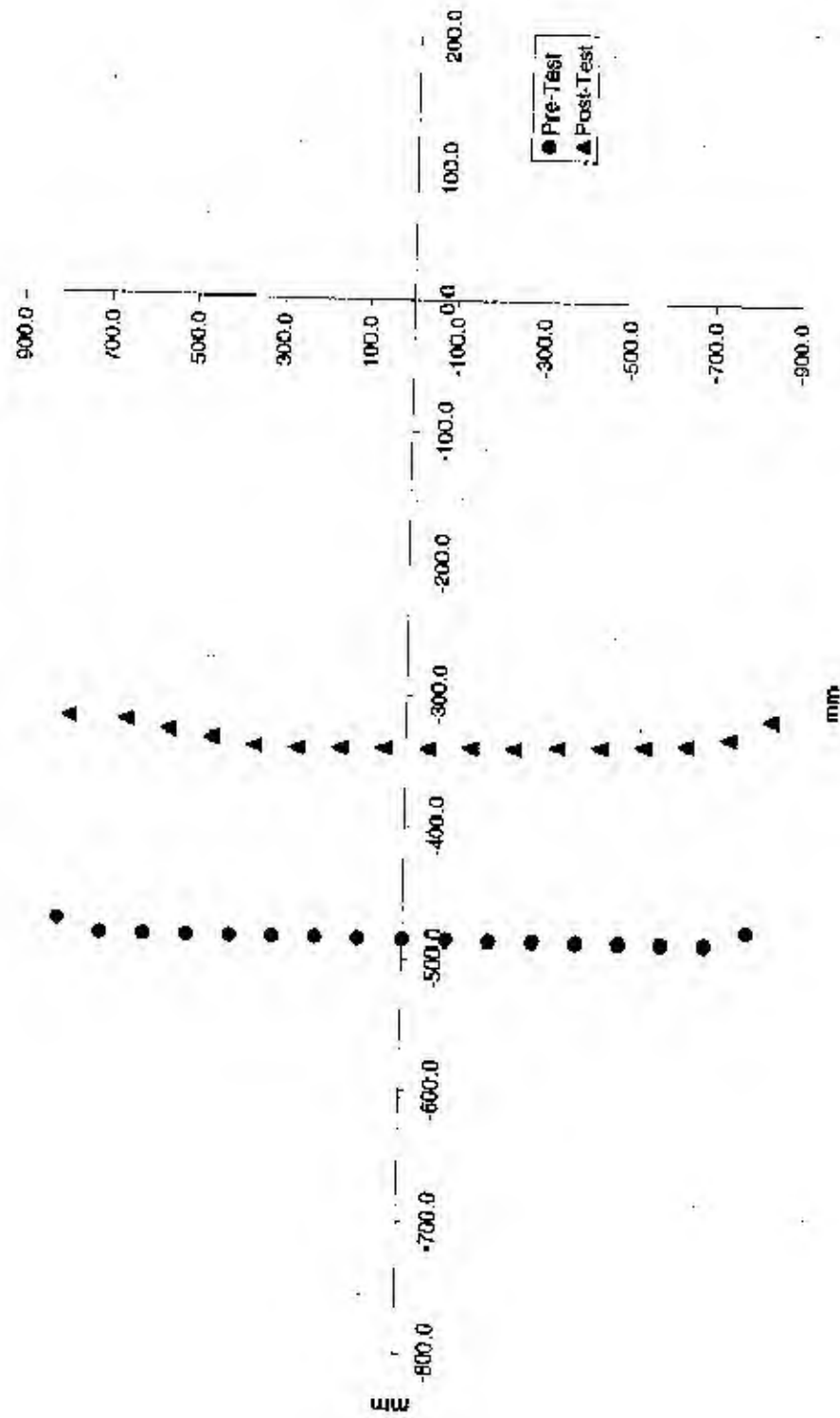
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

Level A - Deformable Barrier Face Profile 52-68

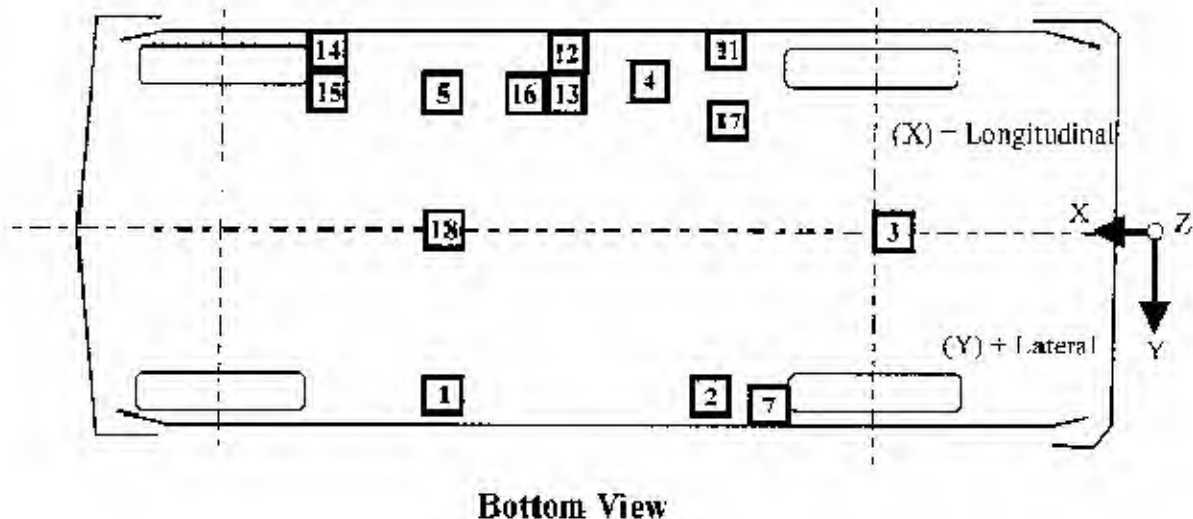
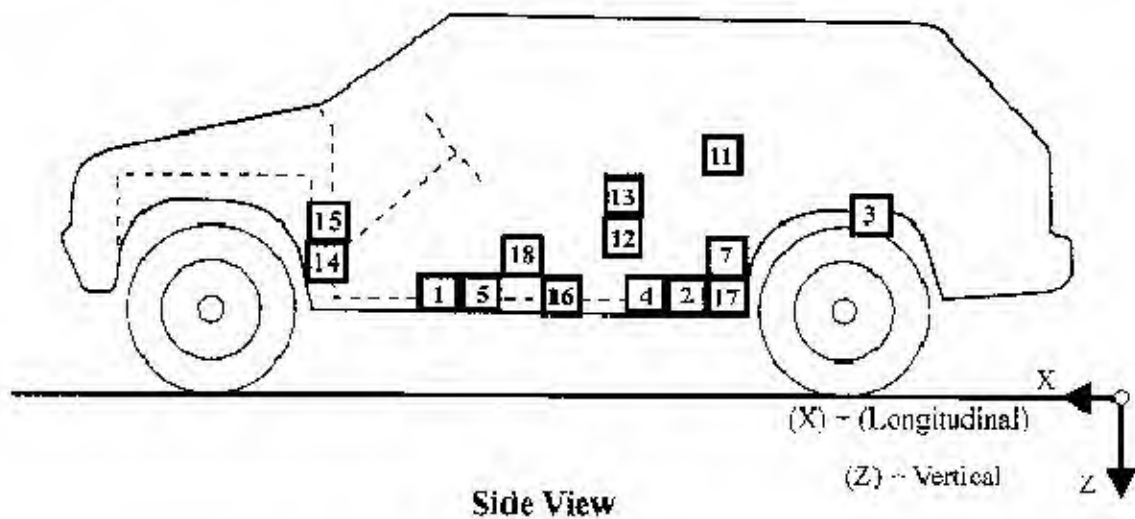


Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



- | | |
|------------------------------------|--|
| 1-Right Front Side Sill | 10-Left Rear Door Mid Rear |
| 2-Right Side Sill at Rear Seat | 11-Left Rear Door Upper Centerline |
| 3-Rear Floorpan above Axle | 12-Left Side Lower B-pillar |
| 4-Left Side Sill at Rear Seat | 13-Left Side Middle B-pillar |
| 5-Left Front Side Sill | 14-Left Side Lower A-pillar |
| 6-Left Front Door on Centerline | 15-Left Side Middle A-pillar |
| 7-Right Rear Occupant Compartment | 16-Left Side Front Seat Track at H-point |
| 8-Left Front Door Mid Rear | 17-Left Rear Seat Track at H-point |
| 9-Left Front Door Upper Centerline | 18-Vehicle Center of Gravity |

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924
No. LOCATION

X Y Z POSITIVE DIRECTION NEGATIVE DIRECTION

1 RIGHT SIDE SILL AT FRONT SEAT	3295 mm	680 mm	-400 mm			
LONGITUDINAL ¹				28.2 g	@ 251.8 ms	97.6 g @ 19.4 ms
LATERAL				26.7 g	@ 6.6 ms	2.0 g @ 281.0 ms
VERTICAL				5.0 g	@ 72.1 ms	12.4 g @ 7.5 ms
RESULTANT ¹				98.5 g	@ 19.4 ms	
2 RIGHT SIDE SILL AT REAR SEAT	2405 mm	680 mm	-408 mm			
LONGITUDINAL				3.8 g	@ 59.8 ms	6.5 g @ 9.8 ms
LATERAL				32.4 g	@ 6.8 ms	2.1 g @ 141.4 ms
VERTICAL				5.9 g	@ 139.4 ms	11.3 g @ 12.6 ms
RESULTANT				33.4 g	@ 6.9 ms	
3 REAR FLOORPAN ABOVE AXLE	1460 mm	0 mm	-570 mm			
LONGITUDINAL				2.0 g	@ 110.9 ms	6.9 g @ 16.2 ms
LATERAL				20.9 g	@ 31.7 ms	2.3 g @ 84.2 ms
VERTICAL				6.8 g	@ 44.1 ms	6.0 g @ 56.6 ms
RESULTANT				21.5 g	@ 33.7 ms	
4 LEFT SIDE SILL AT REAR SEAT	2295 mm	-680 mm	-399 mm			
LATERAL				38.1 g	@ 6.2 ms	46.9 g @ 12.5 ms

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924

No. LOCATION

X

Y

Z

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

5 LEFT SIDE SILL
AT FRONT SEAT
LATERAL

3280 mm -680 mm -413 mm

130.0 g @ 7.0 ms 1584.6 g @ 19.5 ms

7 RIGHT REAR OCCUPANT
COMPARTMENT
LATERAL

2260 mm 650 mm -430 mm

32.8 g @ 6.8 ms 2.2 g @ 140.6 ms

12 LEFT LOWER B-POST
LATERAL

2628 mm -750 mm -665 mm

143.6 g @ 5.9 ms 78.3 g @ 18.0 ms

13 LEFT MIDDLE B-POST
LATERAL

2620 mm -750 mm -1027 mm

114.2 g @ 7.9 ms 47.3 g @ 20.7 ms

14 LEFT LOWER A-POST
LATERAL

3730 mm -730 mm -511 mm

40.0 g @ 2.2 ms 76.6 g @ 19.9 ms

15 LEFT MIDDLE A-POST
LATERAL

3685 mm -730 mm -329 mm

57.0 g @ 4.4 ms 8.8 g @ 21.2 ms

16 LEFT FRONT SEAT TRACK
LATERAL

2945 mm -600 mm -470 mm

82.3 g @ 17.5 ms 65.1 g @ 22.3 ms

17 LEFT REAR SEAT TRACK
LATERAL

2015 mm -594 mm -369 mm

35.8 g @ 7.0 ms 29.5 g @ 20.6 ms

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

TEST NUMBER: 030924
No. LOCATION

	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
18 VEHICLE CENTER OF GRAVITY	3300 mm	40 mm	-415 mm		
LONGITUDINAL				3.2 g @ 59.2 ms	8.4 g @ 12.0 ms
LATERAL				28.1 g @ 6.5 ms	1.9 g @ 281.4 ms
VERTICAL				17.9 g @ 17.5 ms	9.5 g @ 54.8 ms
RESULTANT				31.3 g @ 6.4 ms	

REFERENCE: X: + FORWARD FROM REAR BUMPER
Y: + RIGHTWARD FROM VEHICLE CENTERLINE
Z: + DOWNWARD FROM GROUND LEVEL

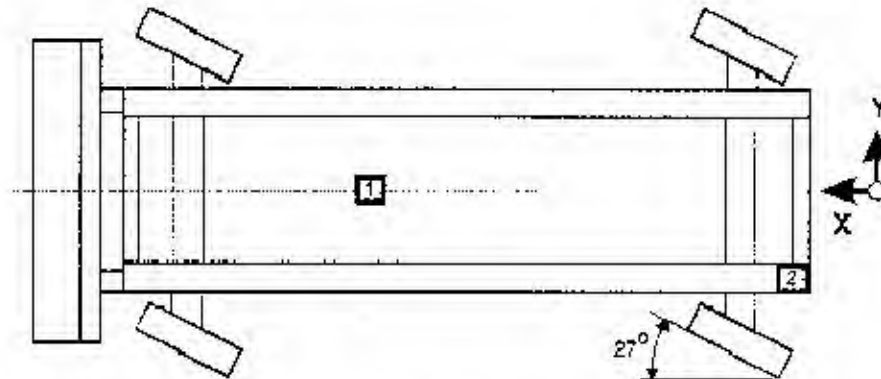
For acceleration data sign convention see Report Sign Convention in Appendix D.
• See DATA ACQUISITION EXPLANATIONS on page 2-3

Data Sheet 14

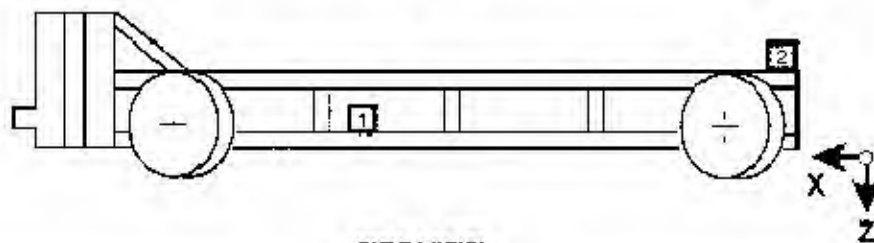
MDB Accelerometer Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



TOP VIEW



SIDE VIEW

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1855	0	-520				
	Longitudinal X				5.1	98.2	23.2	35.4
	Lateral Y				4.2	61.6	7.1	21.4
	Vertical Z				5.6	59.5	6.3	22.4
	Resultant R				23.7	35.4		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.9	119.4	25.4	35.9
	Lateral Y				2.5	14.9	2.7	58.7

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

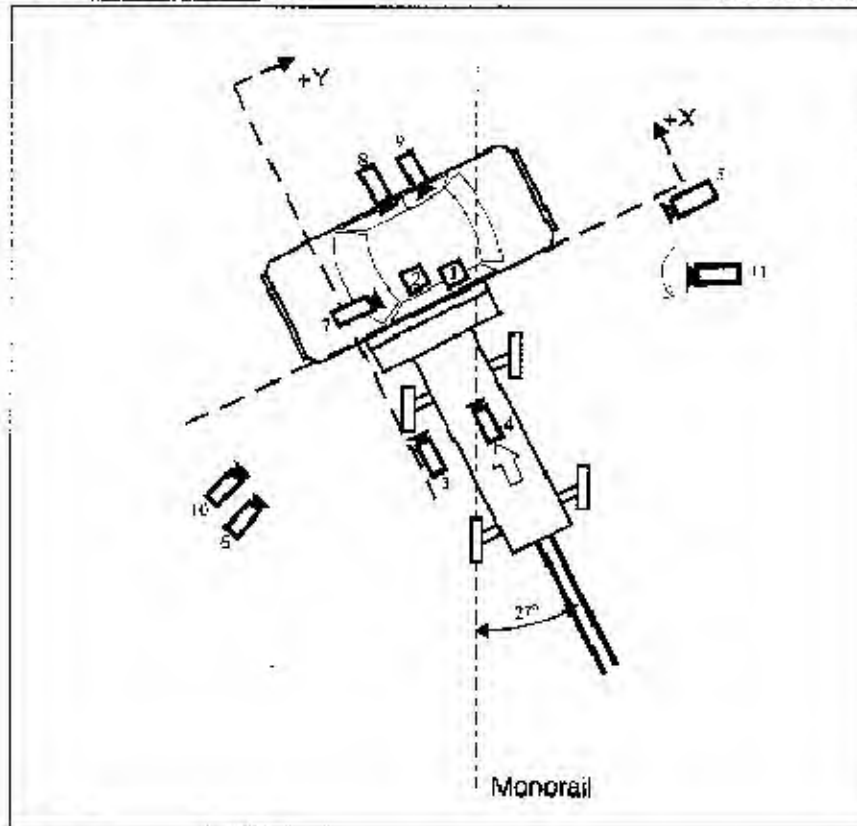
All measurements accurate to within +3 mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101



Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	8.5	350
2	Overhead tight	370	1800	-5750	-85.5	17	955
3	Onboard MDB left side	-1750	-40	-720	-0.5	13	1000
4	Onboard MDB center	-2480	830	-1353	-5.2	25	997
5	Right side of MDB	-670	10550	-1180	0.7	13	1000
6	Left side of MDB	3100	-4250	-1030	1.4	13	870
7	Onboard vehicle front	540	-460	-1450	9.7	13	680
8	Onboard side front door	-1770	770	-1220	0.8	8	N/A ¹
9	Onboard side rear door	-1770	1670	-1270	-2.3	8	N/A ¹
10	Digital overall event	2950	-4500	-953	1.5	13	1000
11	Real-time Panning-Video	N/A	N/A	N/A	N/A	Zoom	30

+X: Forward (referenced to MDB) from impact point
 +Y: Rightward (referenced to MDB) from impact point
 +Z: Downward from ground level

¹ Camera ran too slow to time.

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C45101

Test Date: 09/24/03

Vehicle Year/Make/Model/Body Style: 2004 Lexus RX330 MPV

Test Vehicle Impact Type :

- ☐ Frontal (48.28 km/h)
☐ Oblique (48.28 km/h) with ____° barrier face
first contacting the (driver/passenger) side
☐ Rear Moving Barrier (48.28 km/h)
☐ Lateral Moving Barrier (32.19 km/h)
☒ Side Impact Moving Deformable Barrier (62.0
km/h) contacting the Driver's side side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

None

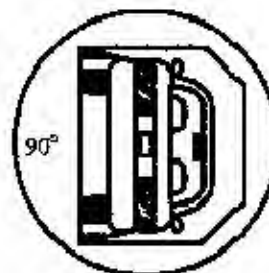
Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

0 - 90 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

Total 6 minutes 30 seconds

Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

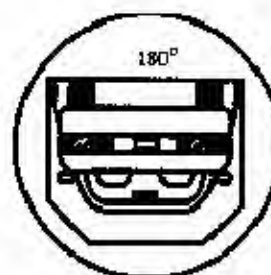
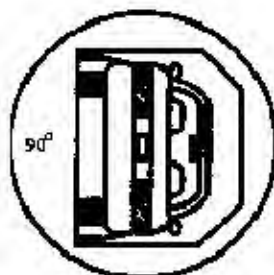
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

90 - 180 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>30</u>	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	<u>5</u>	minutes	<u>0</u>	seconds
Total	<u>6</u>	minutes	<u>30</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

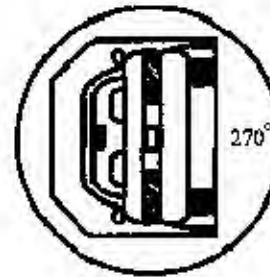
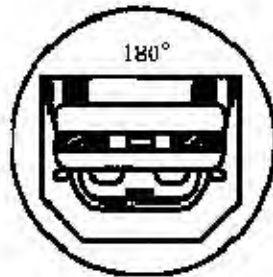
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time - 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

<u>142 g</u>	<u>28 g</u>	<u>28 g</u>	<u>28 g</u>
--------------	-------------	-------------	-------------

3. Actual Test Vehicle Solvent Spillage:

<u>0 g</u>	<u>0 g</u>	<u>0 g</u>	<u>N/A</u>
------------	------------	------------	------------

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

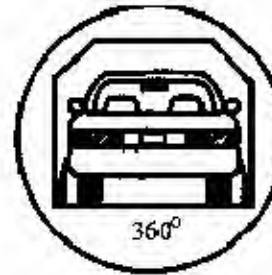
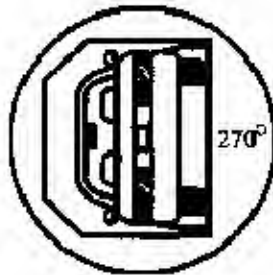
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Lexus RX330 MPV

NHTSA No.: C45101

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time ~ 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Appendix A

Photographs

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¹ The test vehicle is incorrectly labeled as C45600 in the photos. The correct NHTSA number for this vehicle is C45101.

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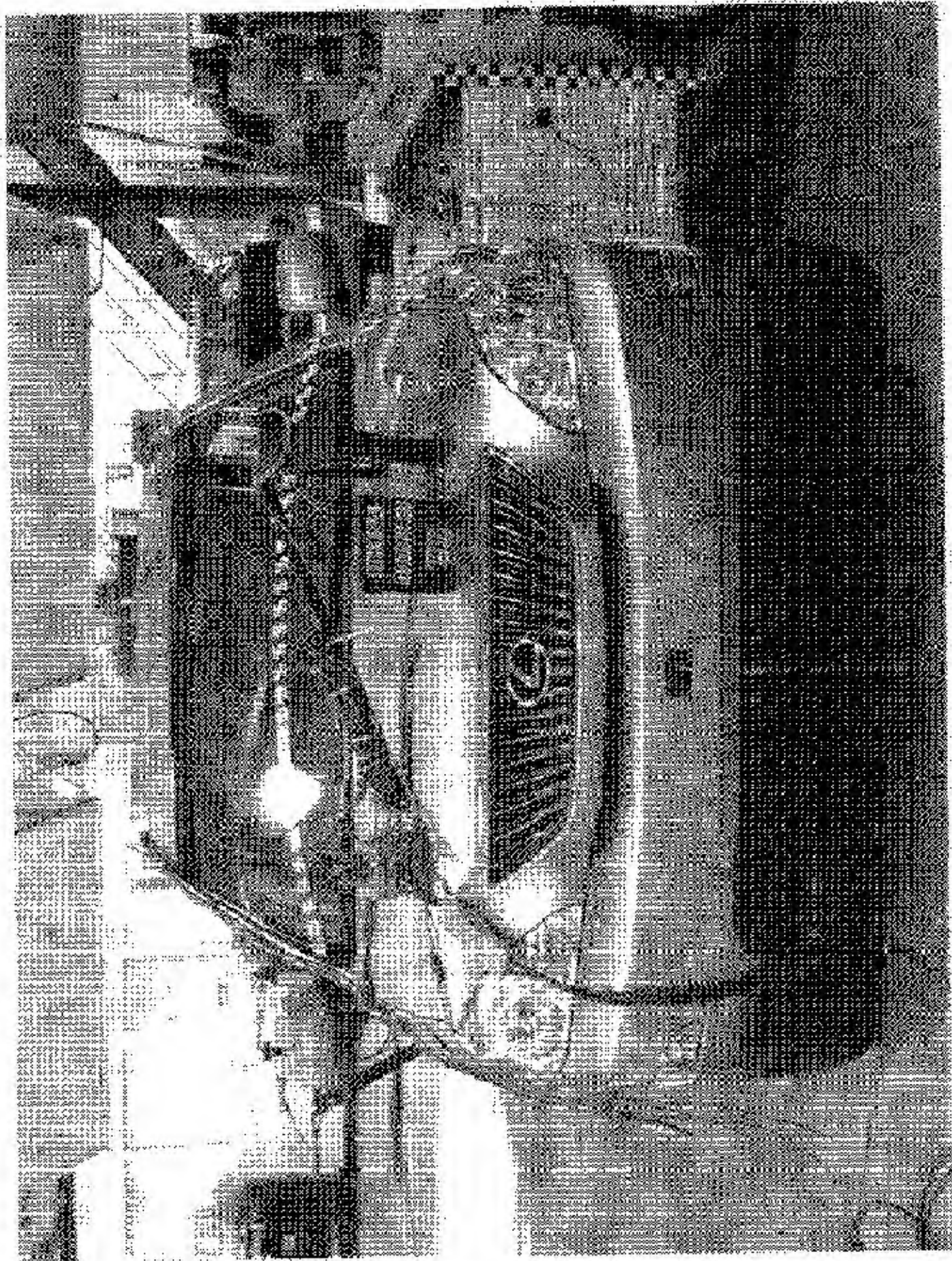


Figure A-1 Pre-Test Front View of Test Vehicle

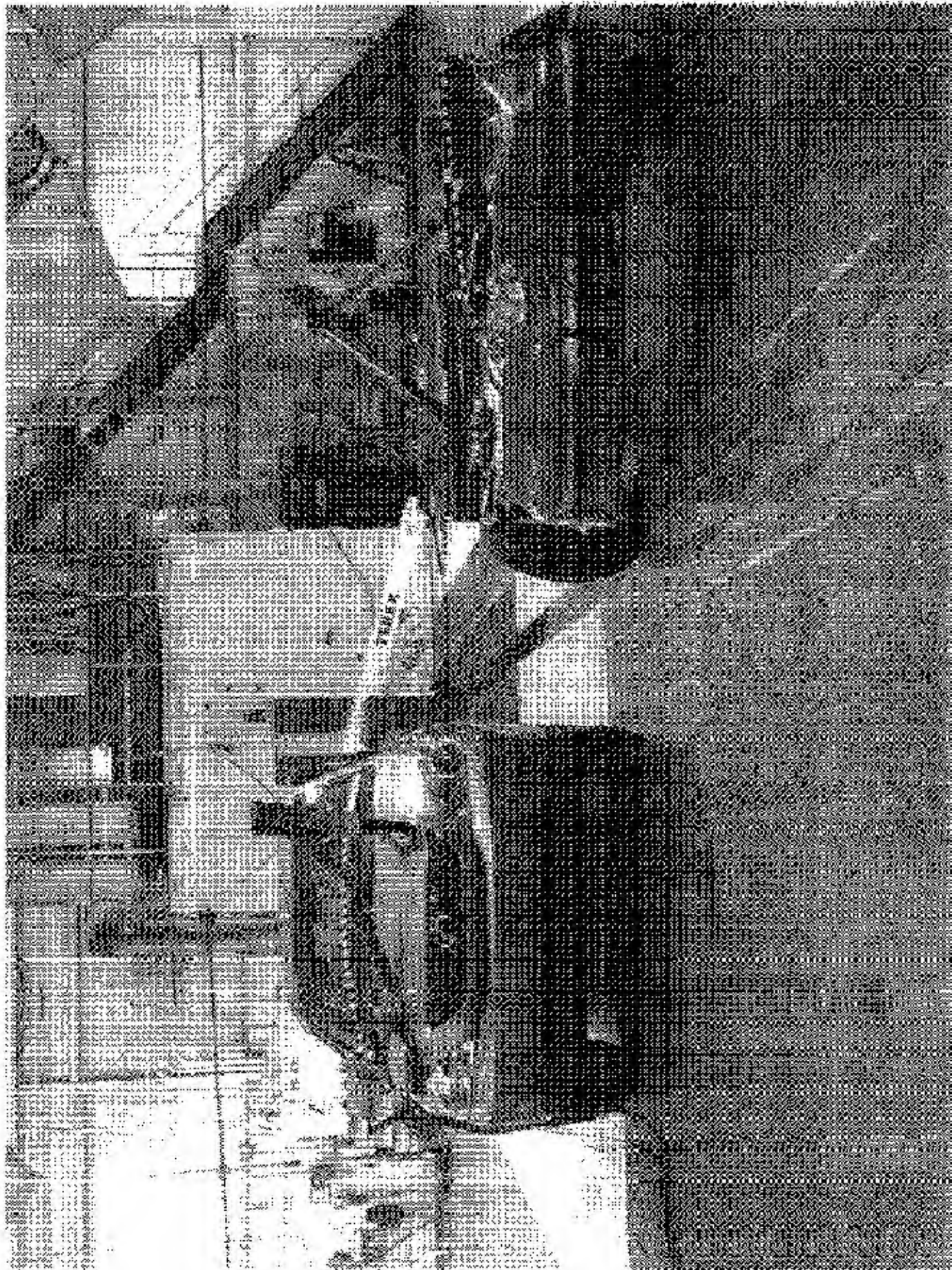


Figure A-2 Post-Test Front View of Test Vehicle

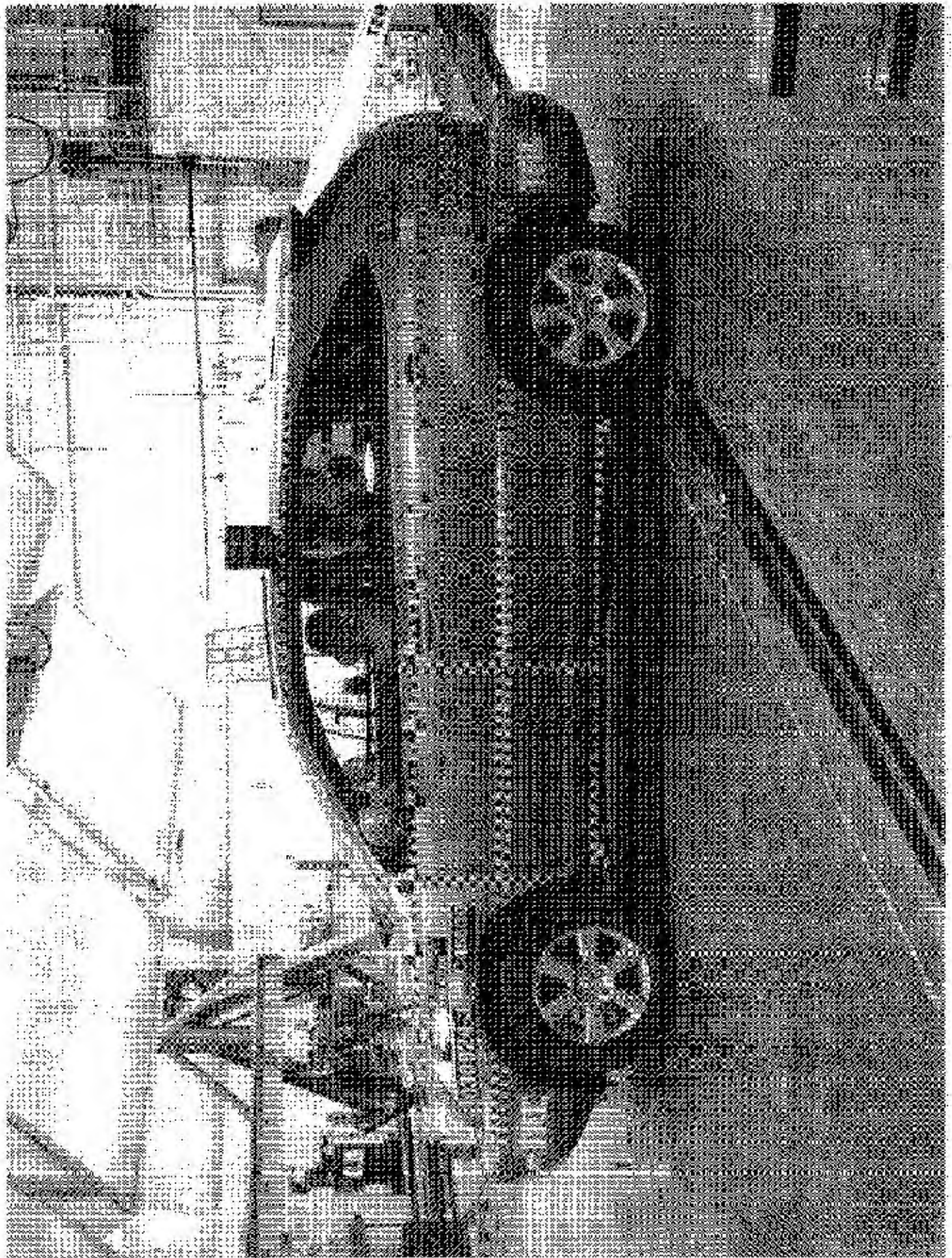


Figure A-3 Pre-Test Impacted Side View of Test Vehicle

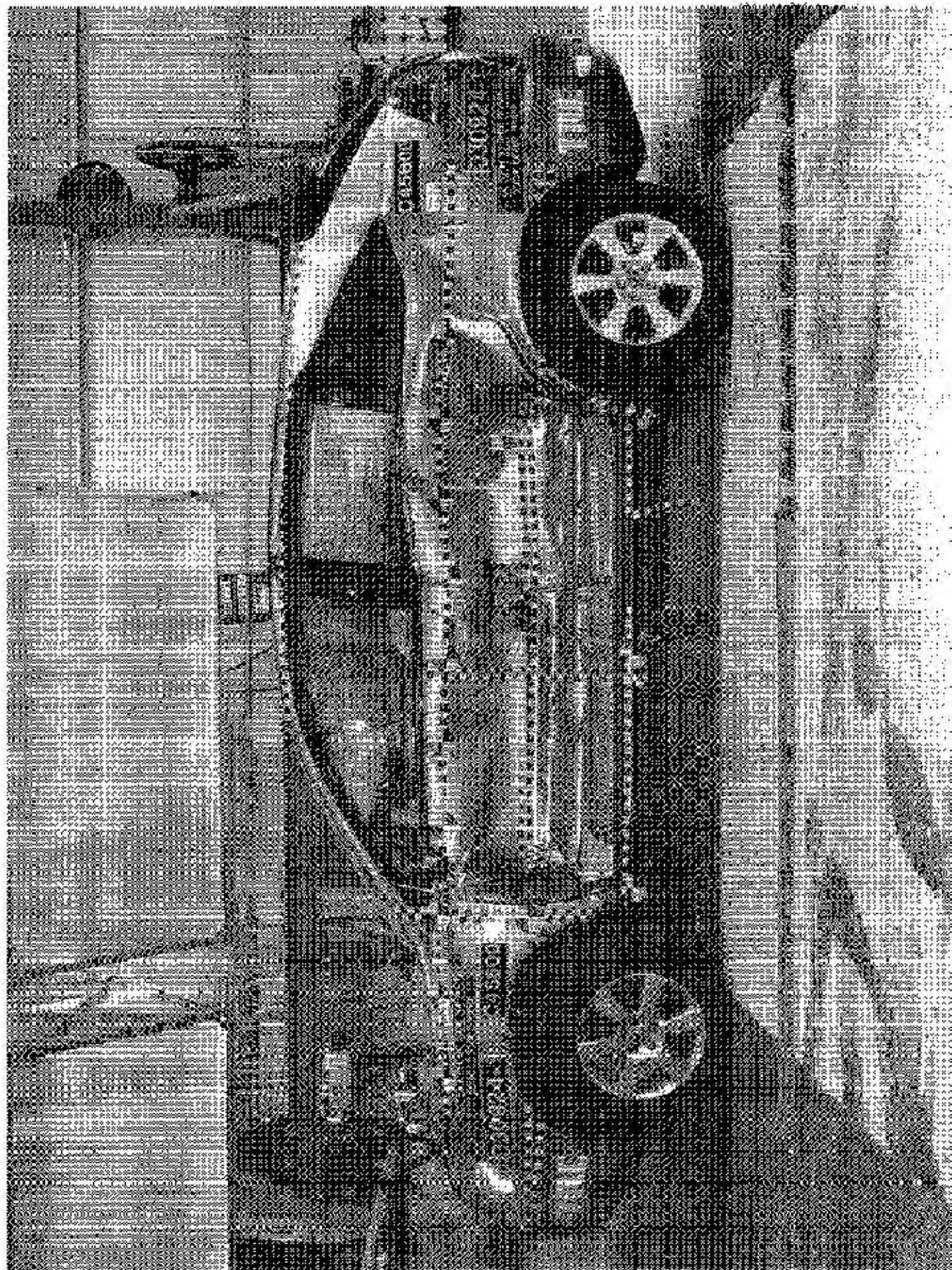


Figure A-4 Post-Test Impacted Side View of Test Vehicle

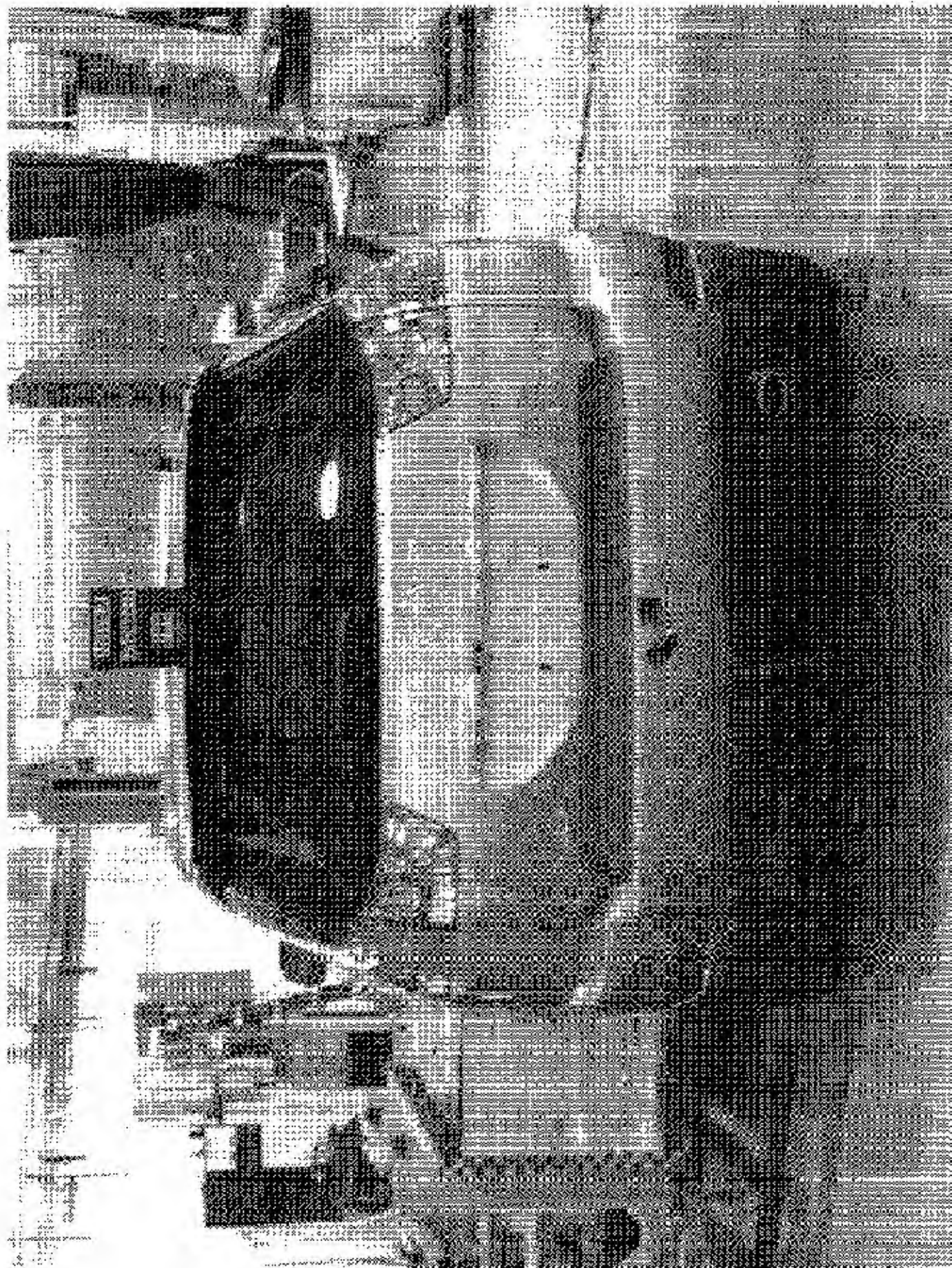


Figure A-5 Pre-Test Rear View of Test Vehicle

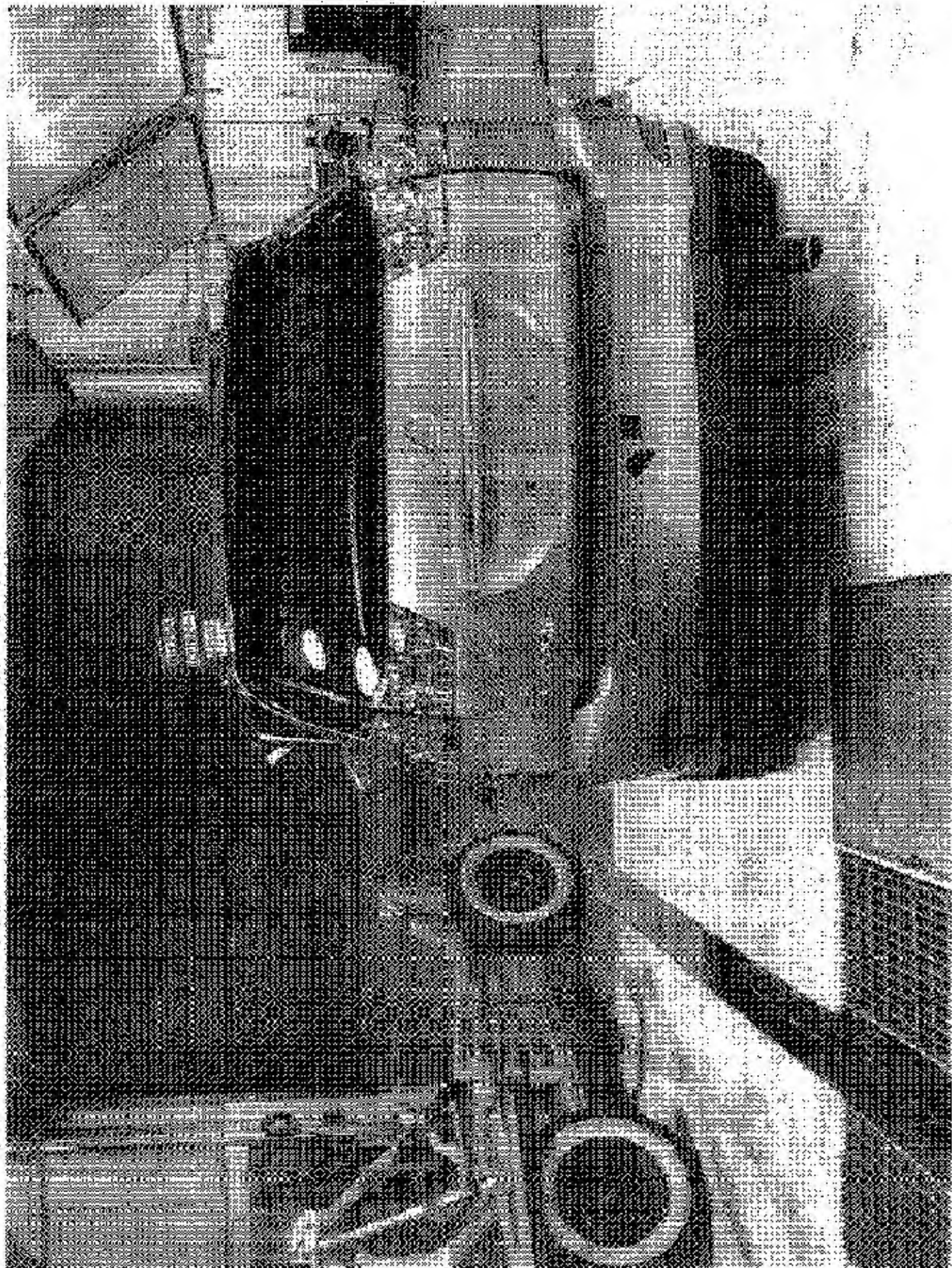


Figure A-6 Post-Test Rear View of Test Vehicle

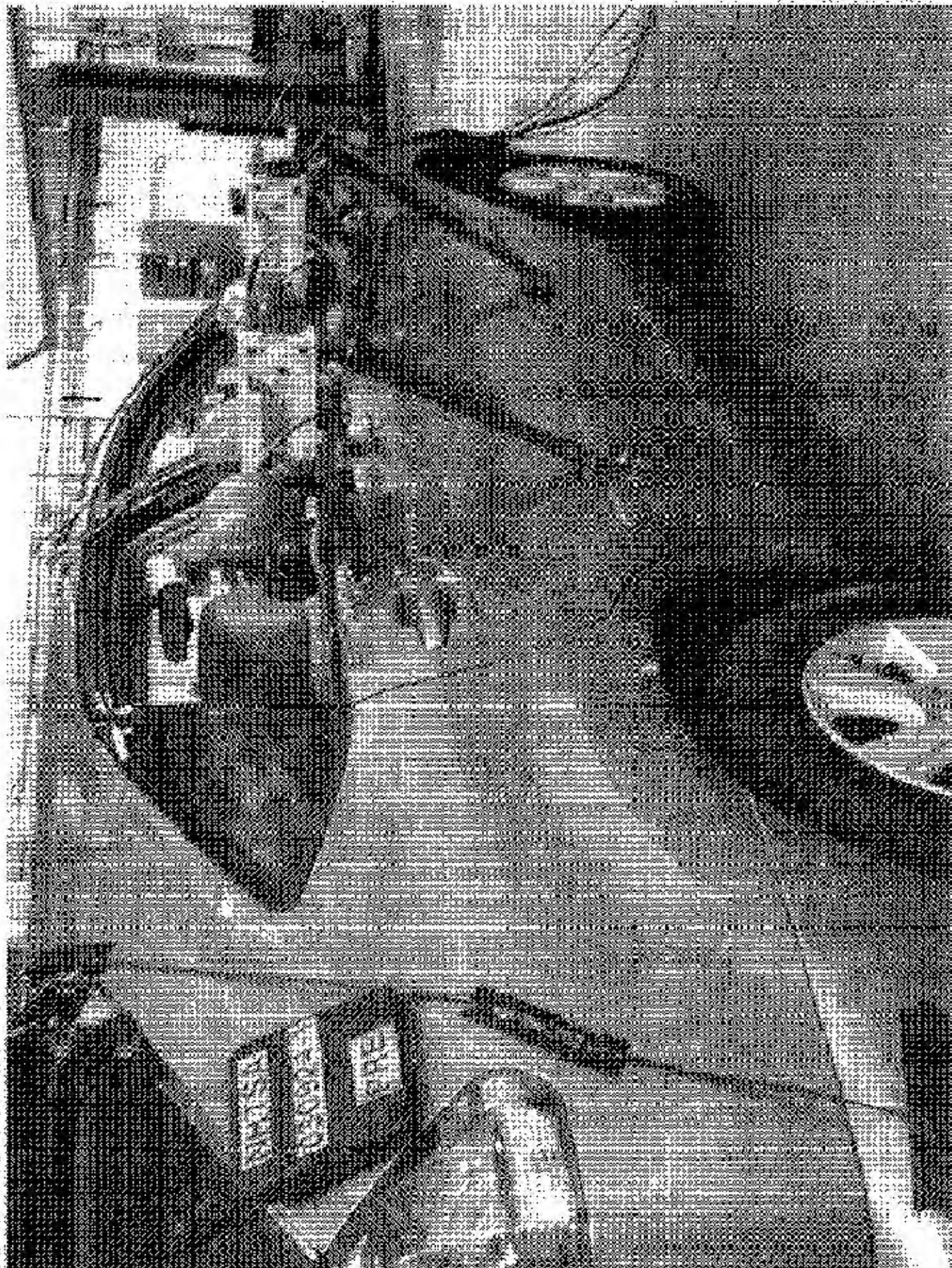


Figure A-7 Pre-Test Right Rear View of Test Vehicle



Figure A-8 Post-Test Right Rear View of Test Vehicle

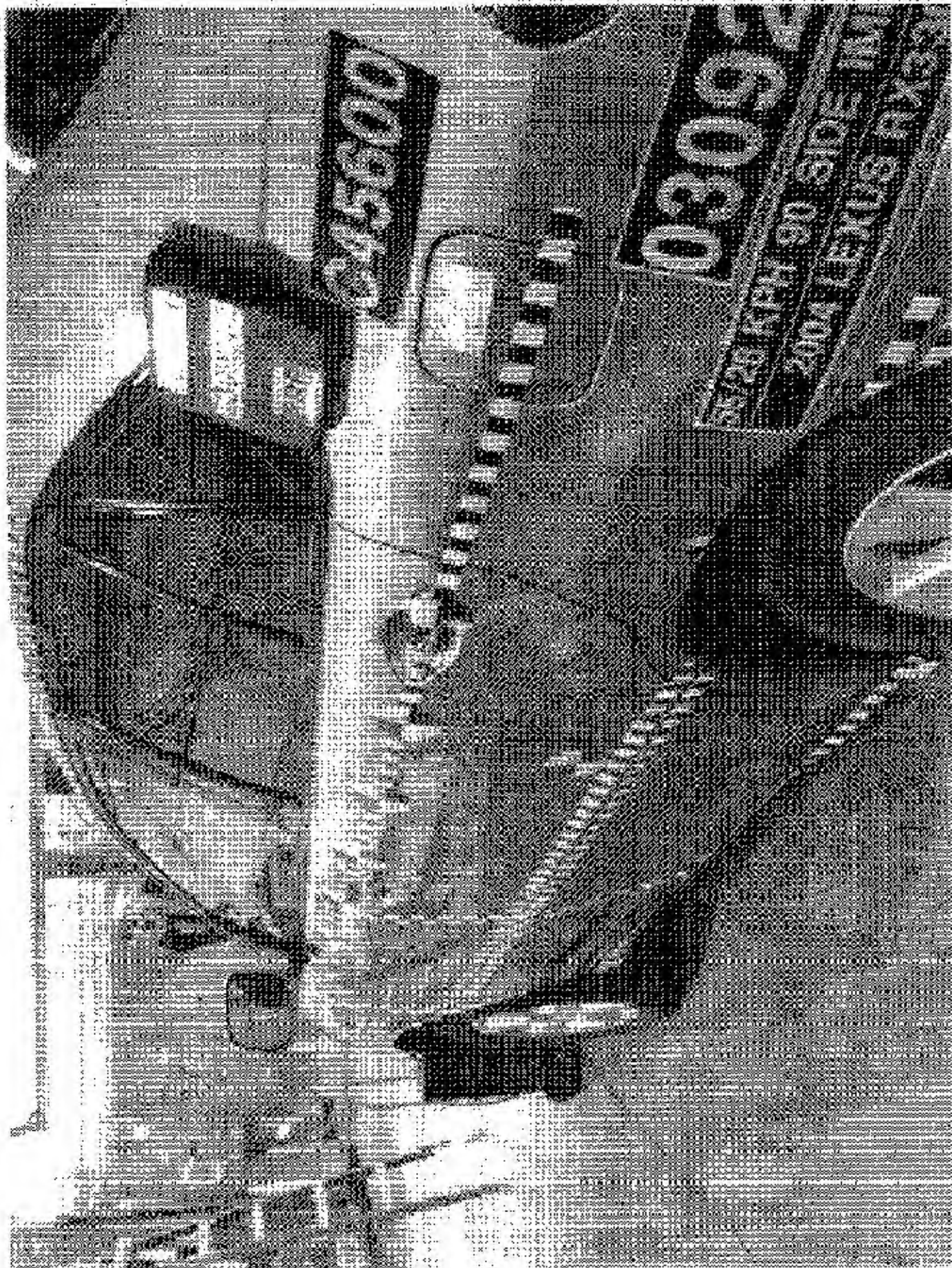


Figure A-9 Pre-Test Impacted Side Angled Door View

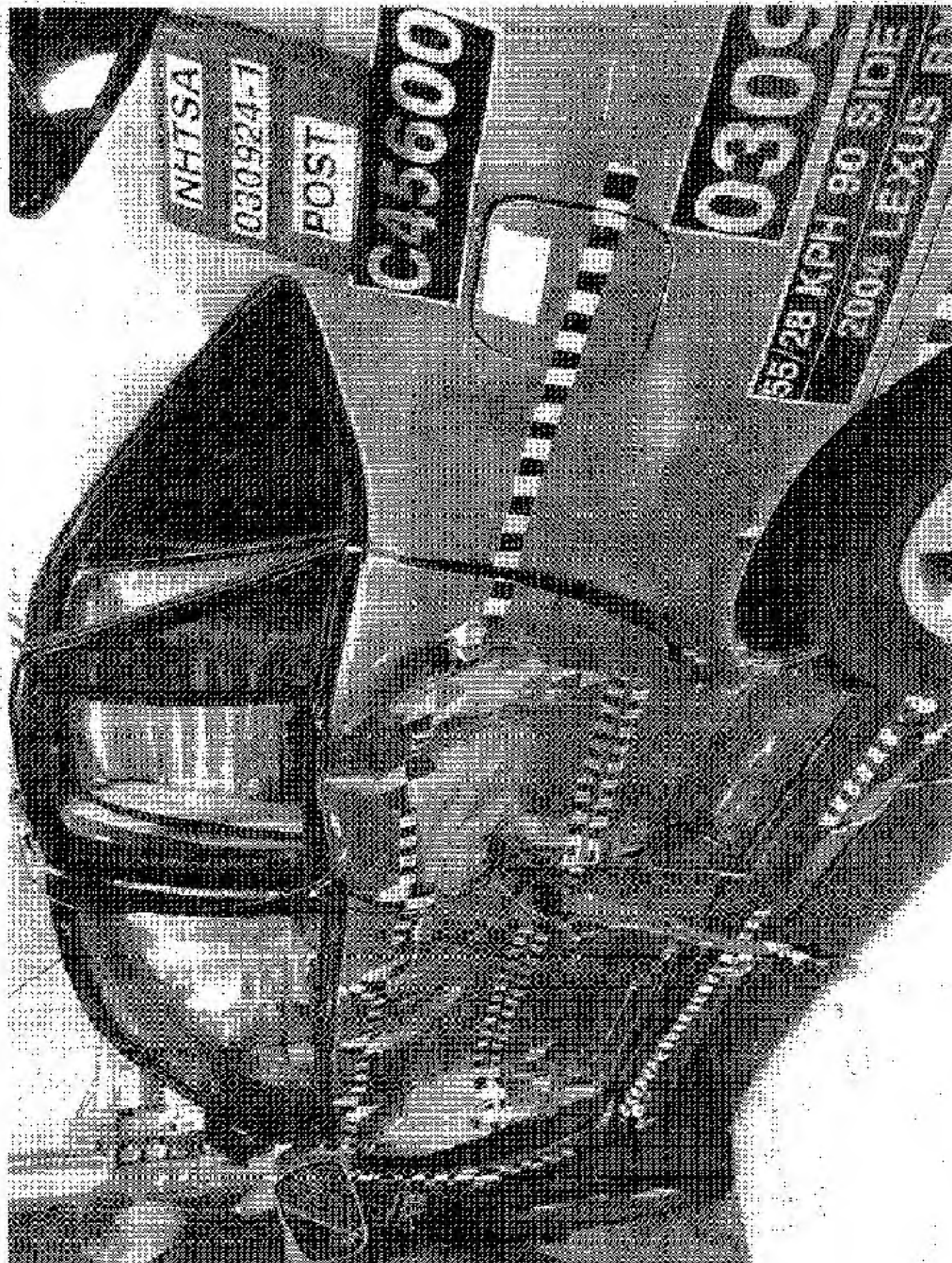


Figure A-10 Post-Test Impacted Side Angled Door View

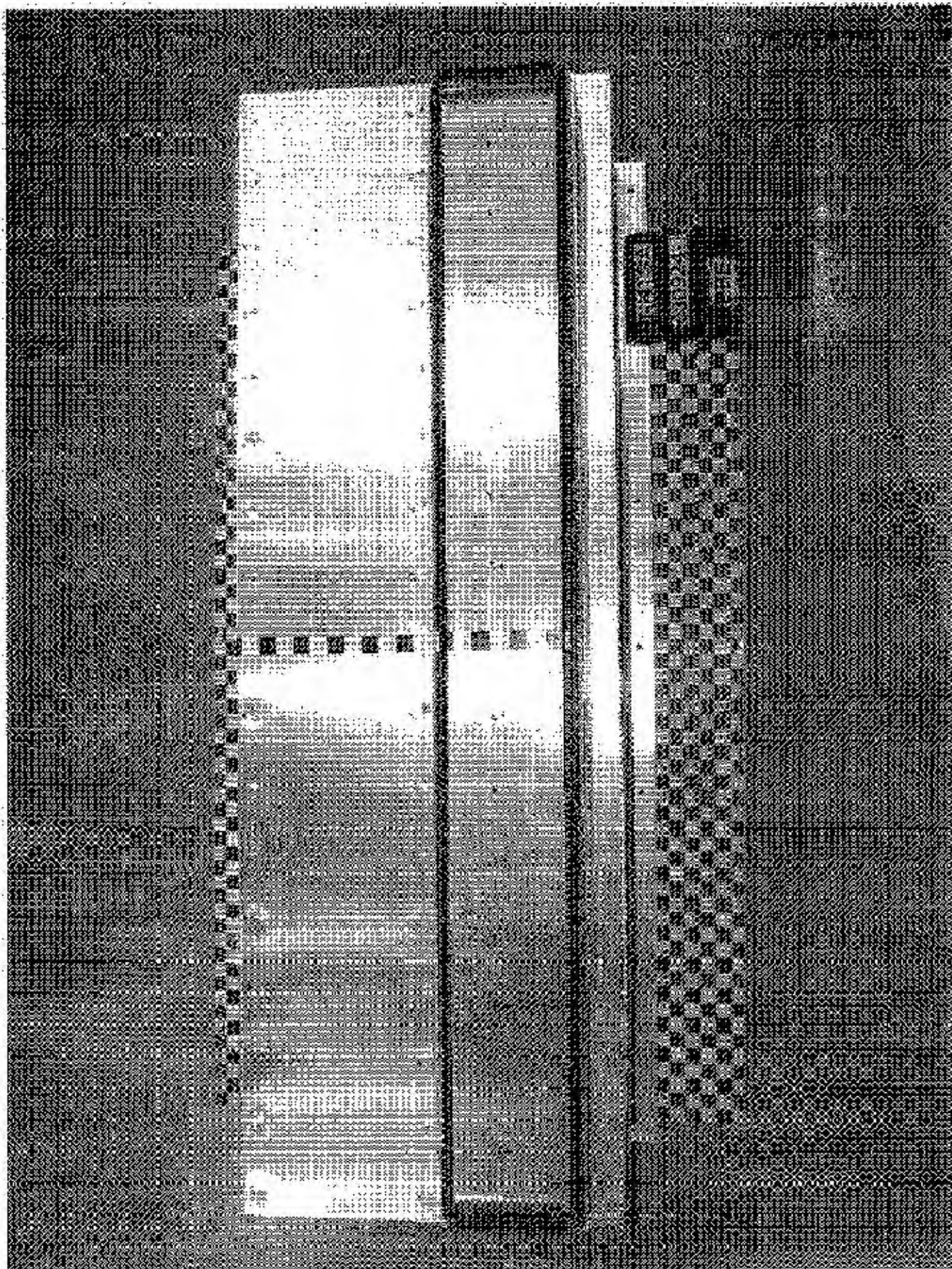


Figure A-11 Pre-Test Frontal View of Impactor Face

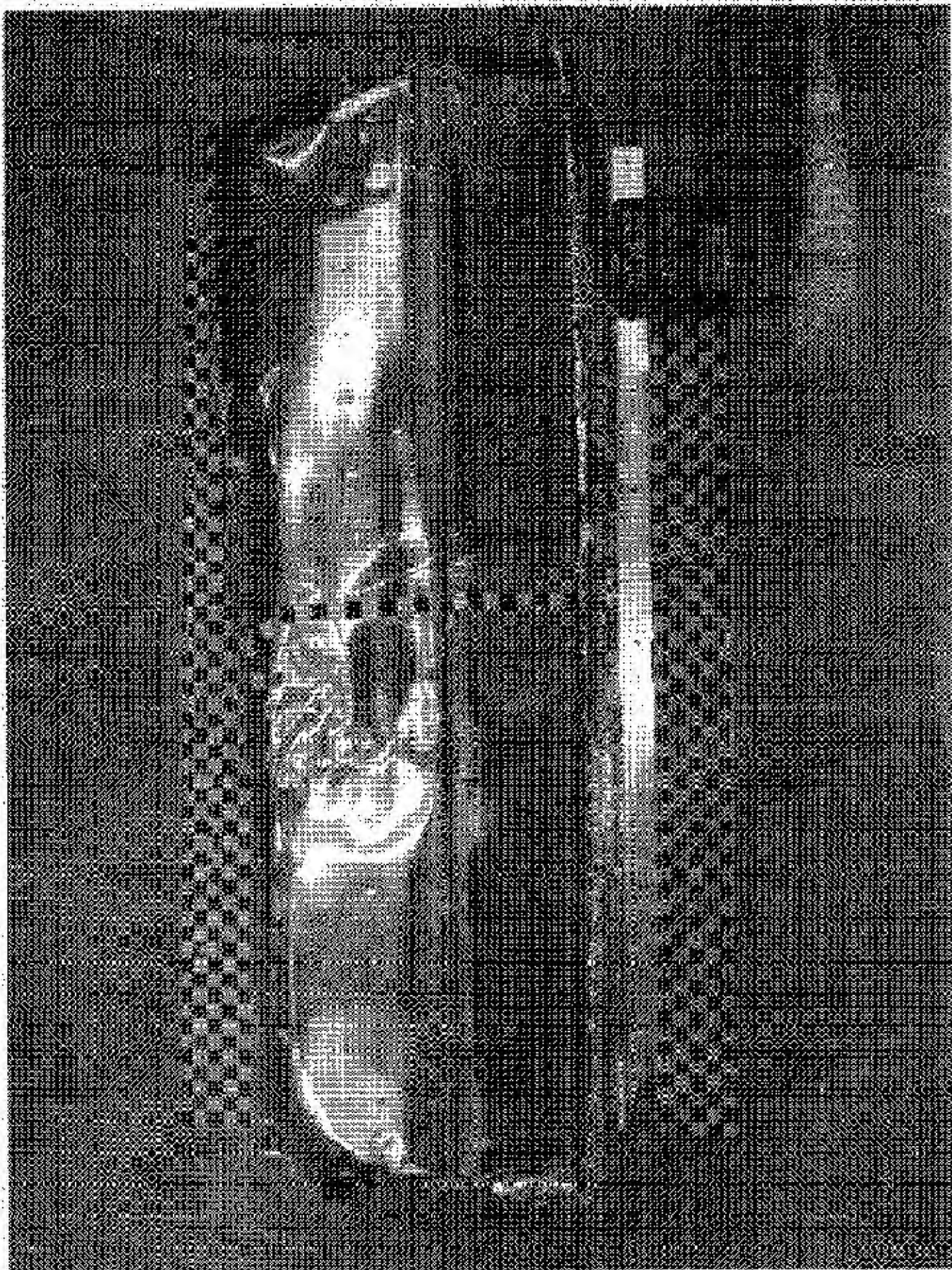


Figure A-12 Post-Test Frontal View of Impactor Face

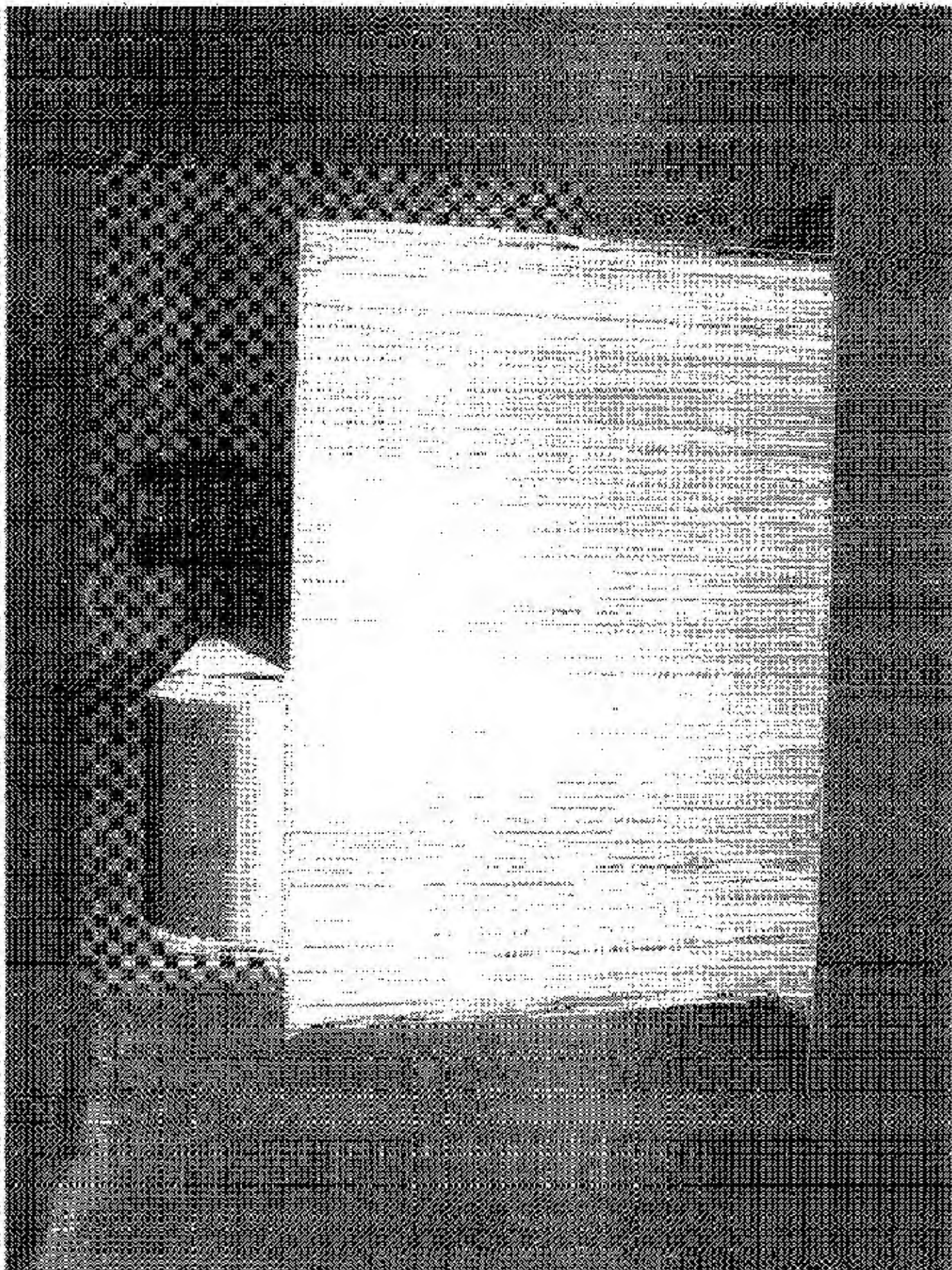


Figure A-13 Pre-Test Left Side View of Impactor Face

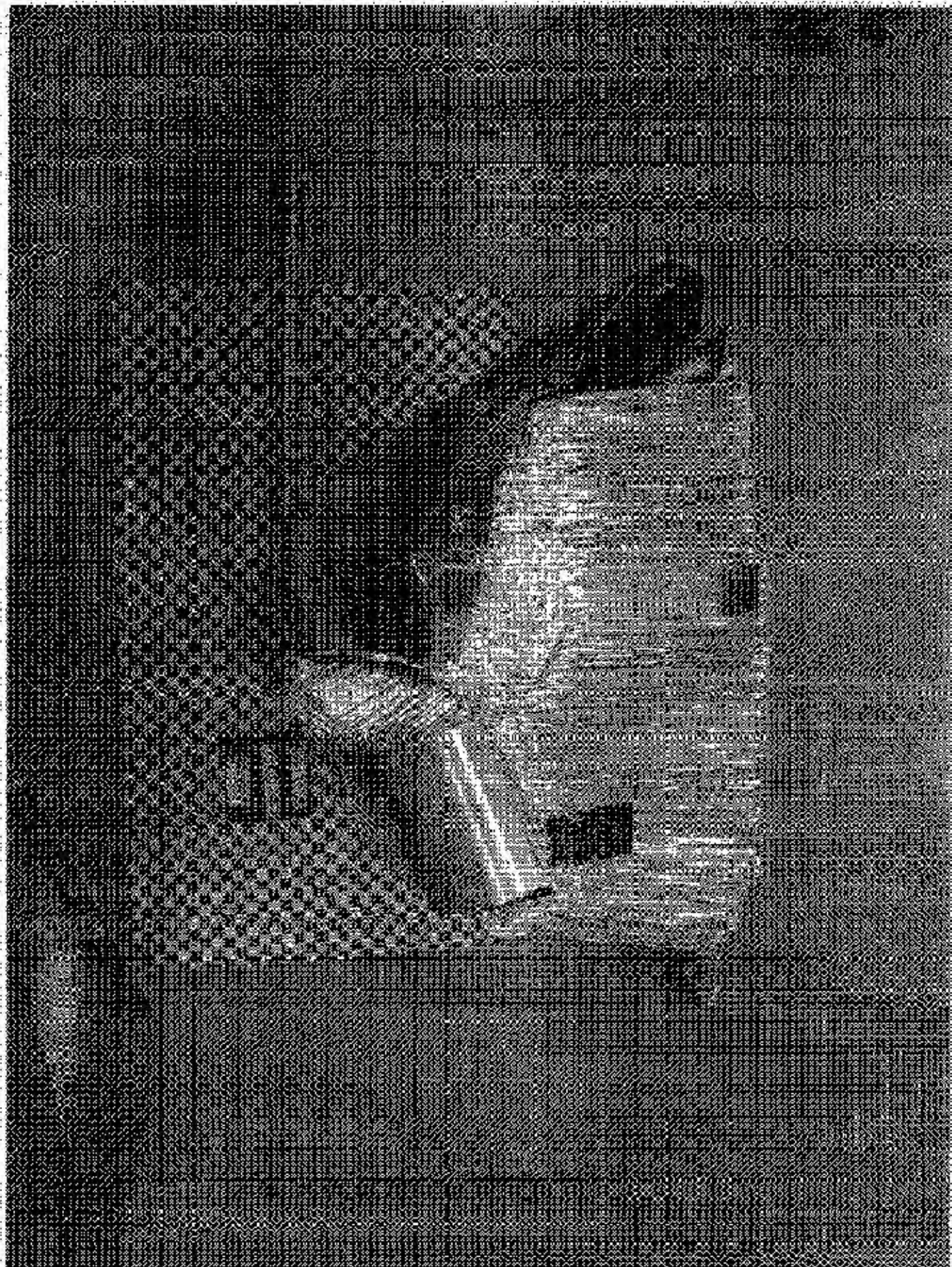


Figure A-14 Post-Test Left Side View of Impactor Face

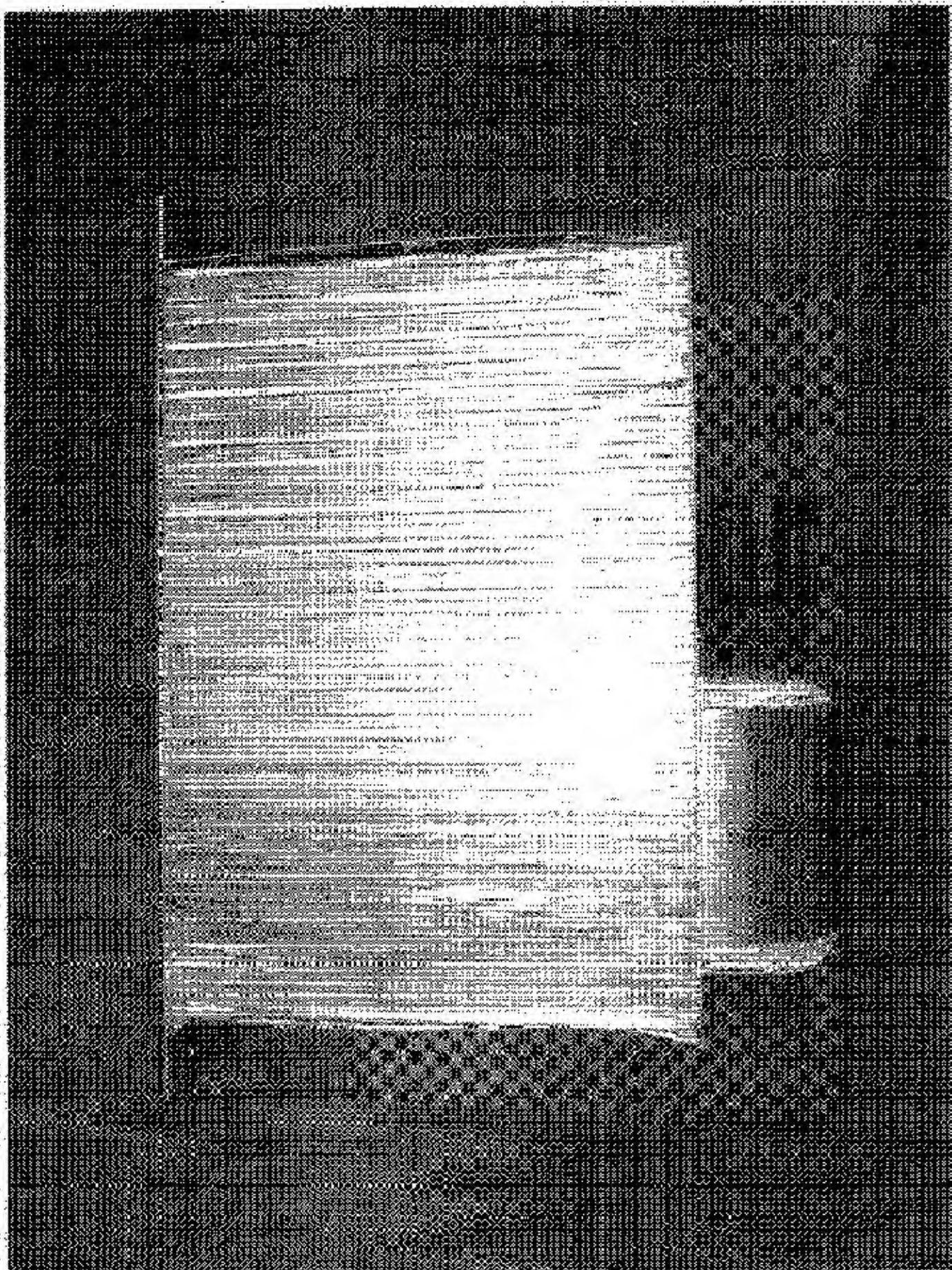


Figure A-15 Pre-Test Right Side View of Impactor Face

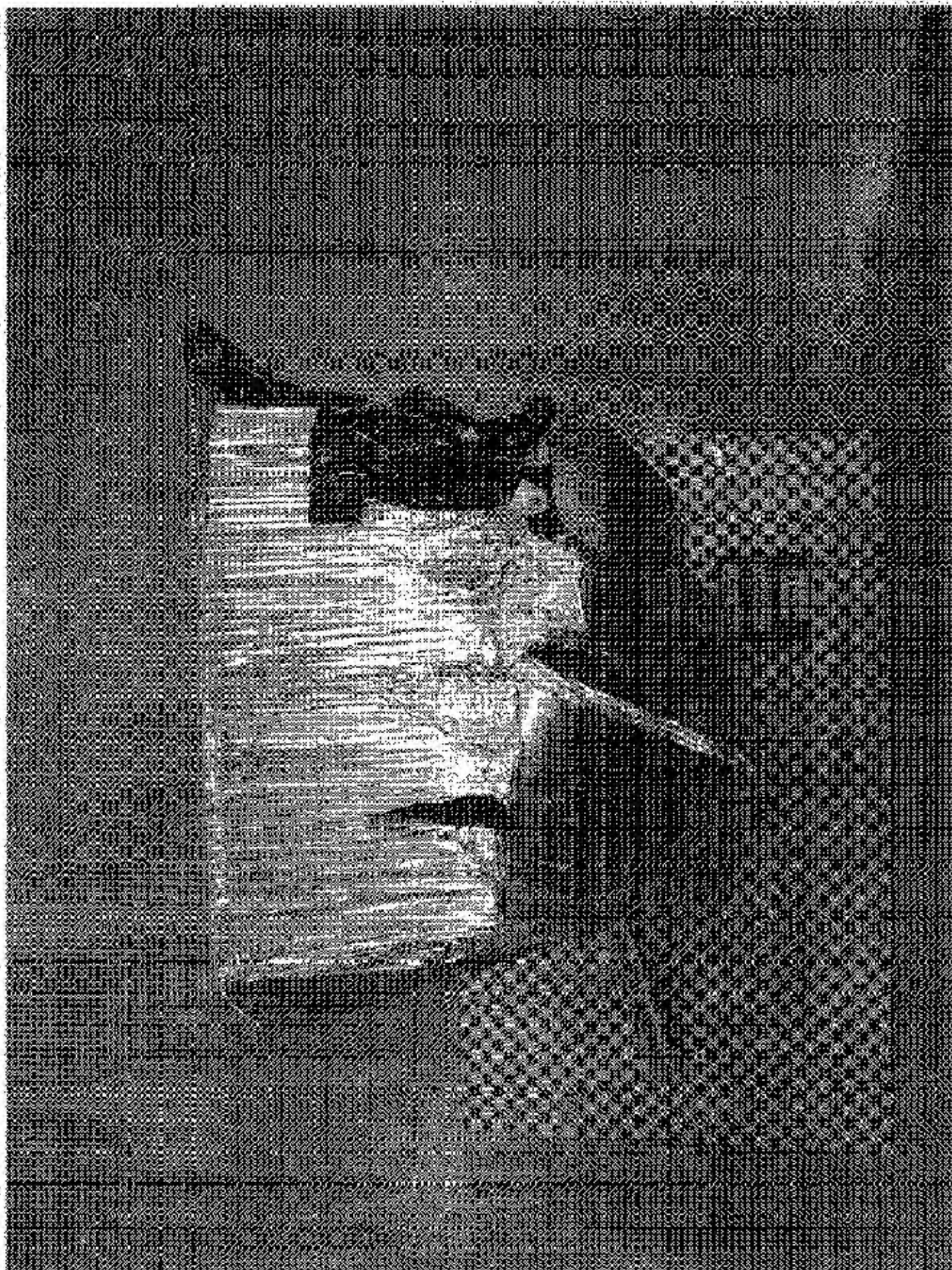


Figure A-16 Post-Test Right Side View of Impactor Face

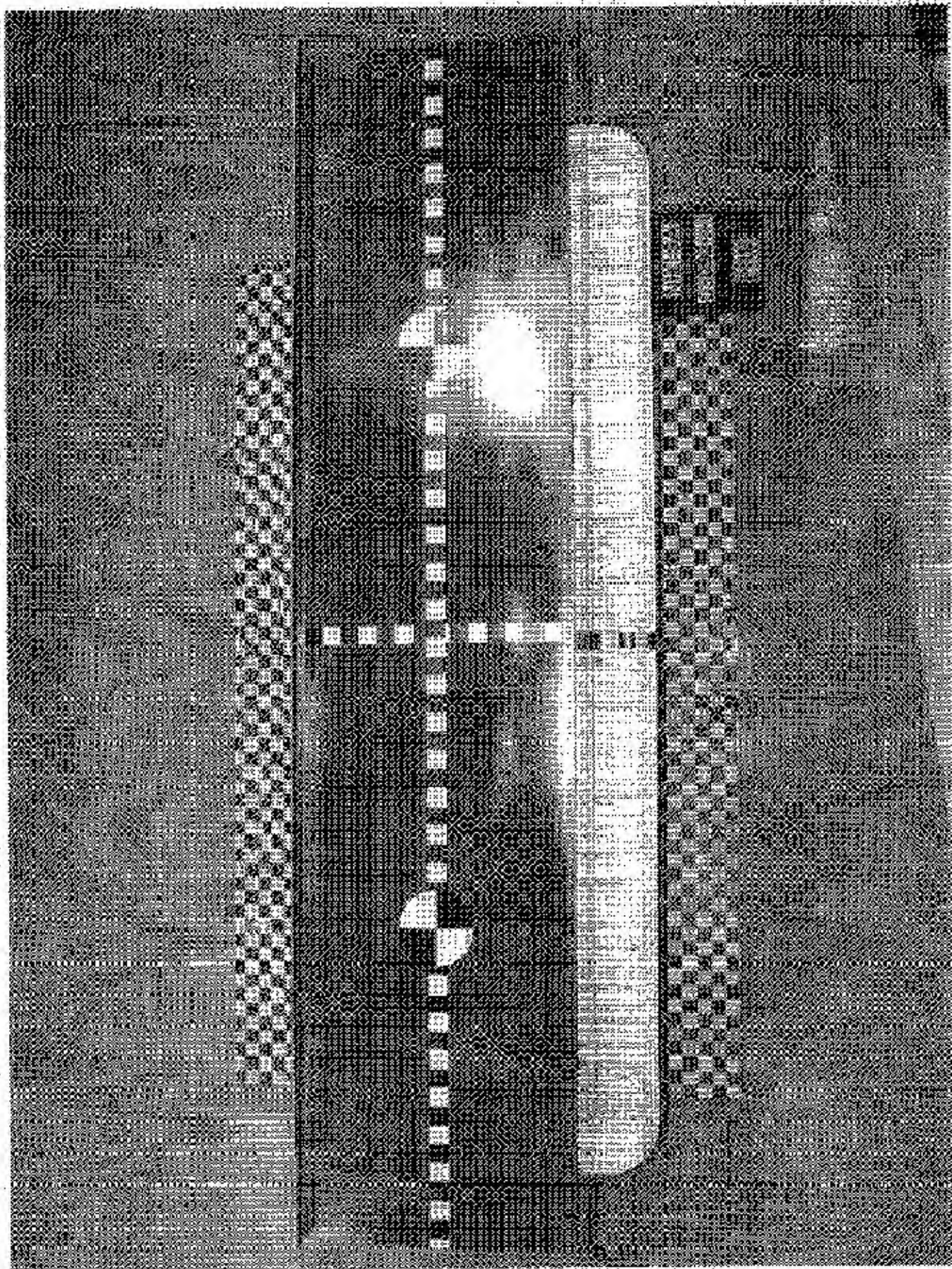


Figure A-17 Pre-Test Top View of Impactor Face

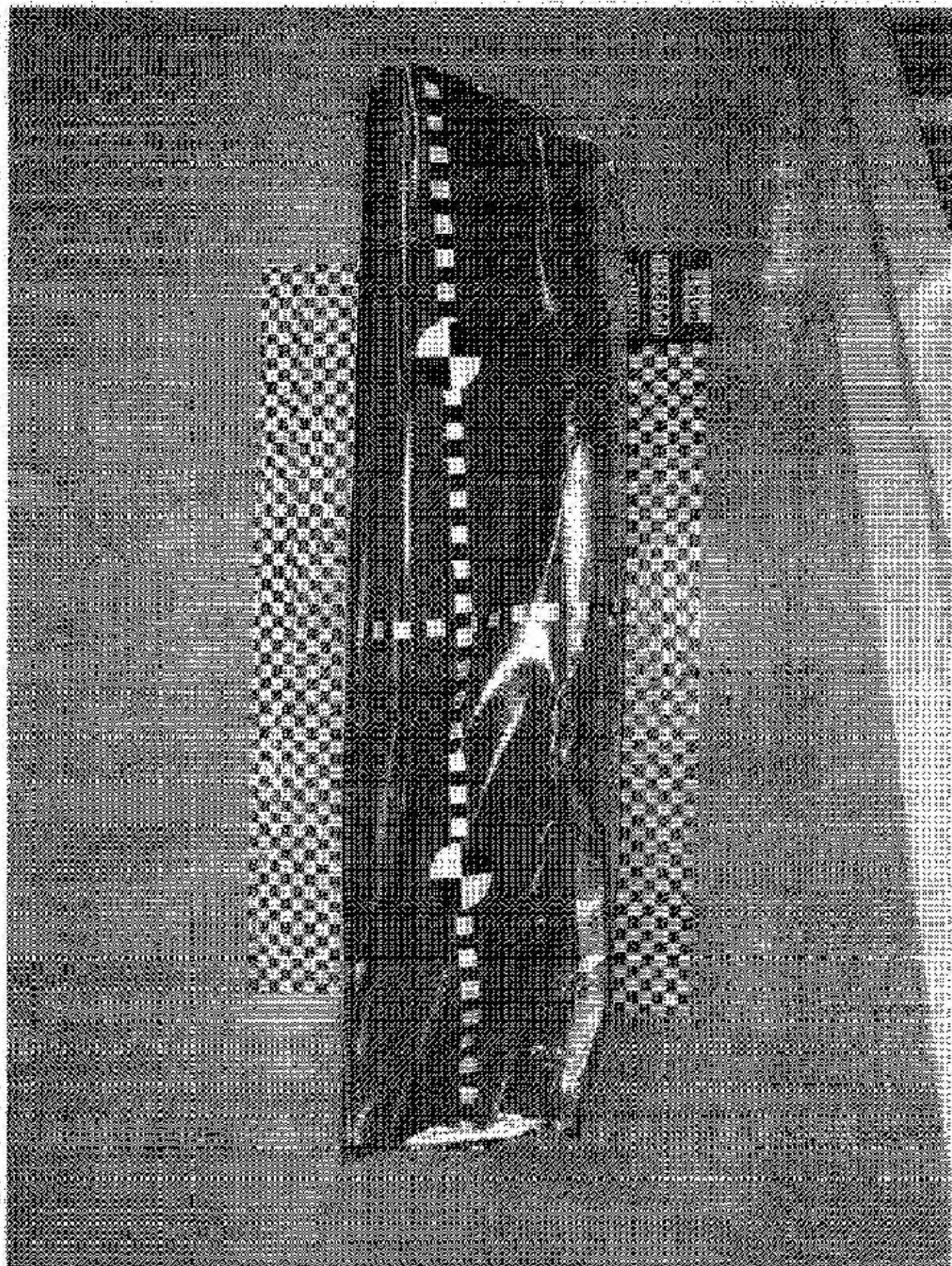


Figure A-18 Post-Test Top View of Impactor Face

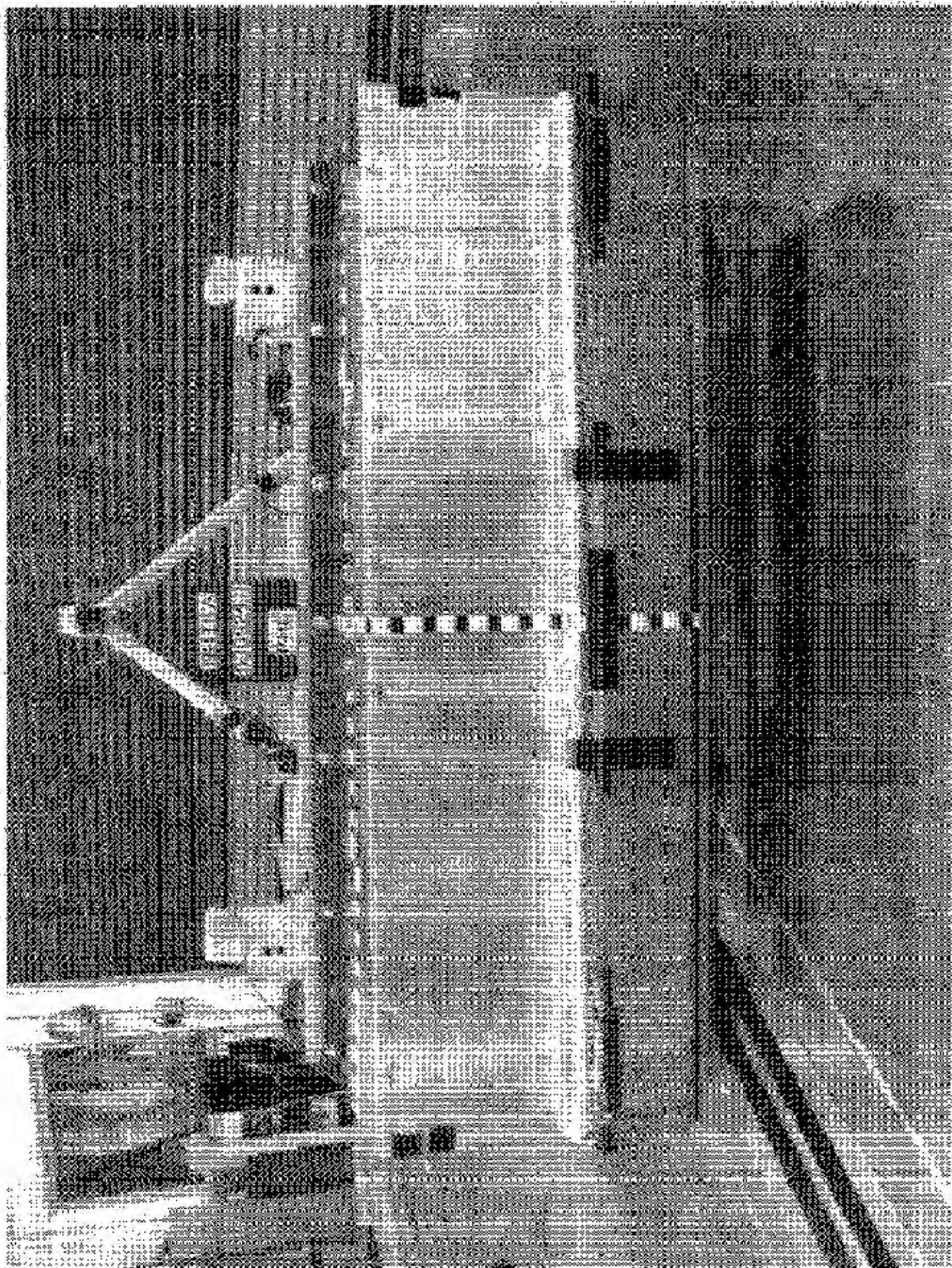


Figure A-19 Pre-Test View of MDB Showing Contact Switches in Place

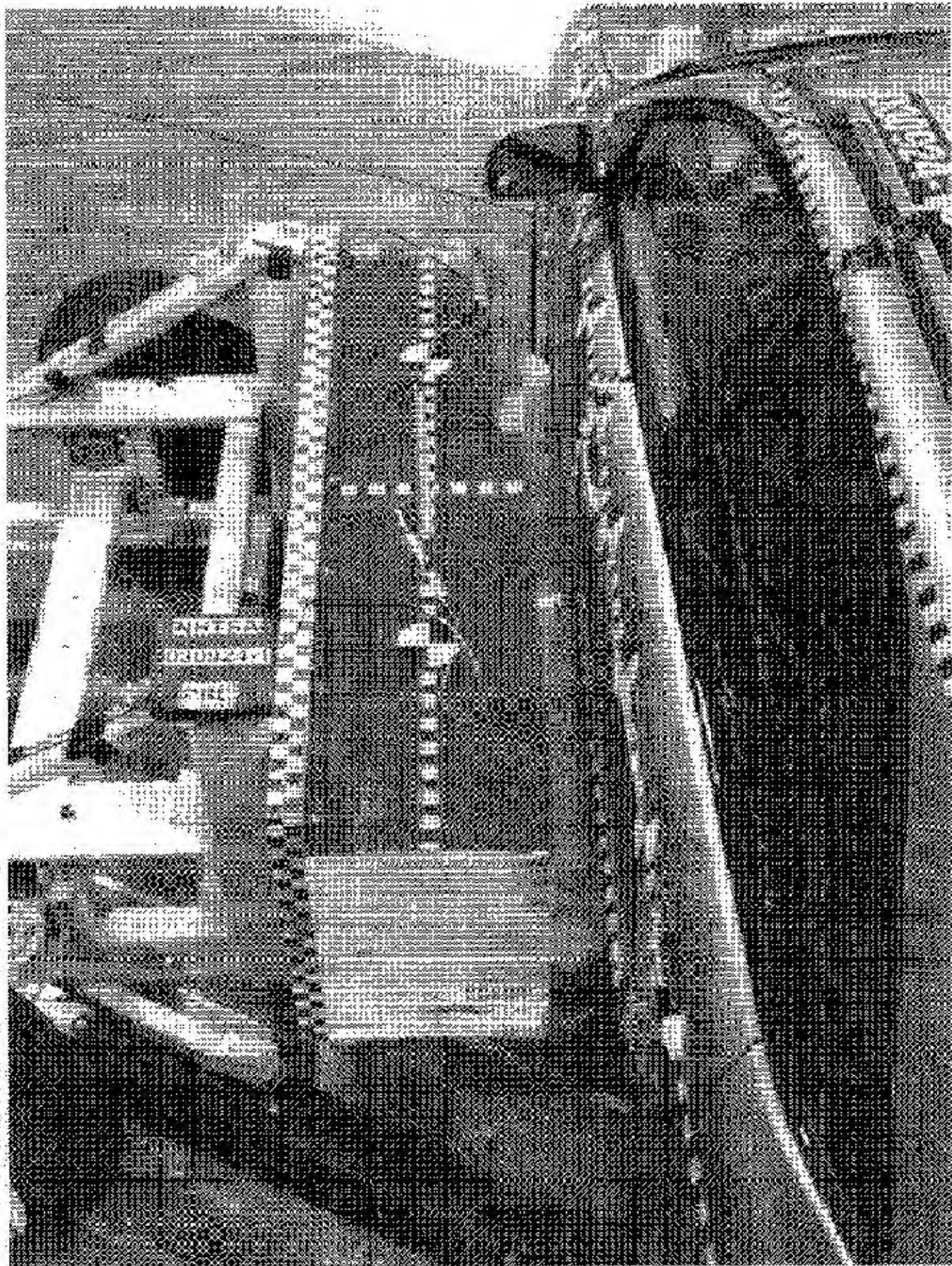


Figure A-20 Pre-Test Overhead View of MDB Aligned with Vehicle

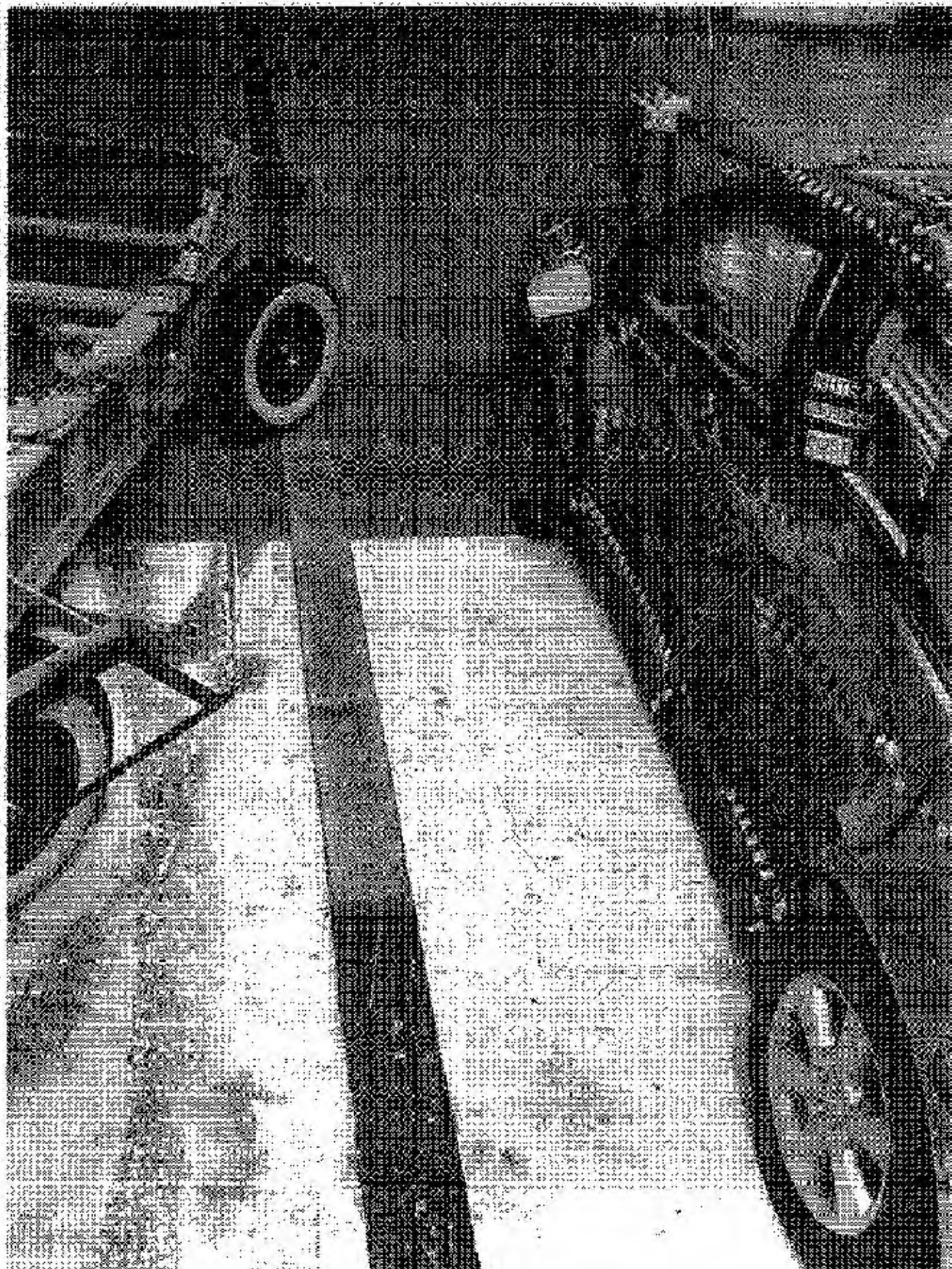


Figure A-21 Post-Test Overhead View of MDB and Vehicle

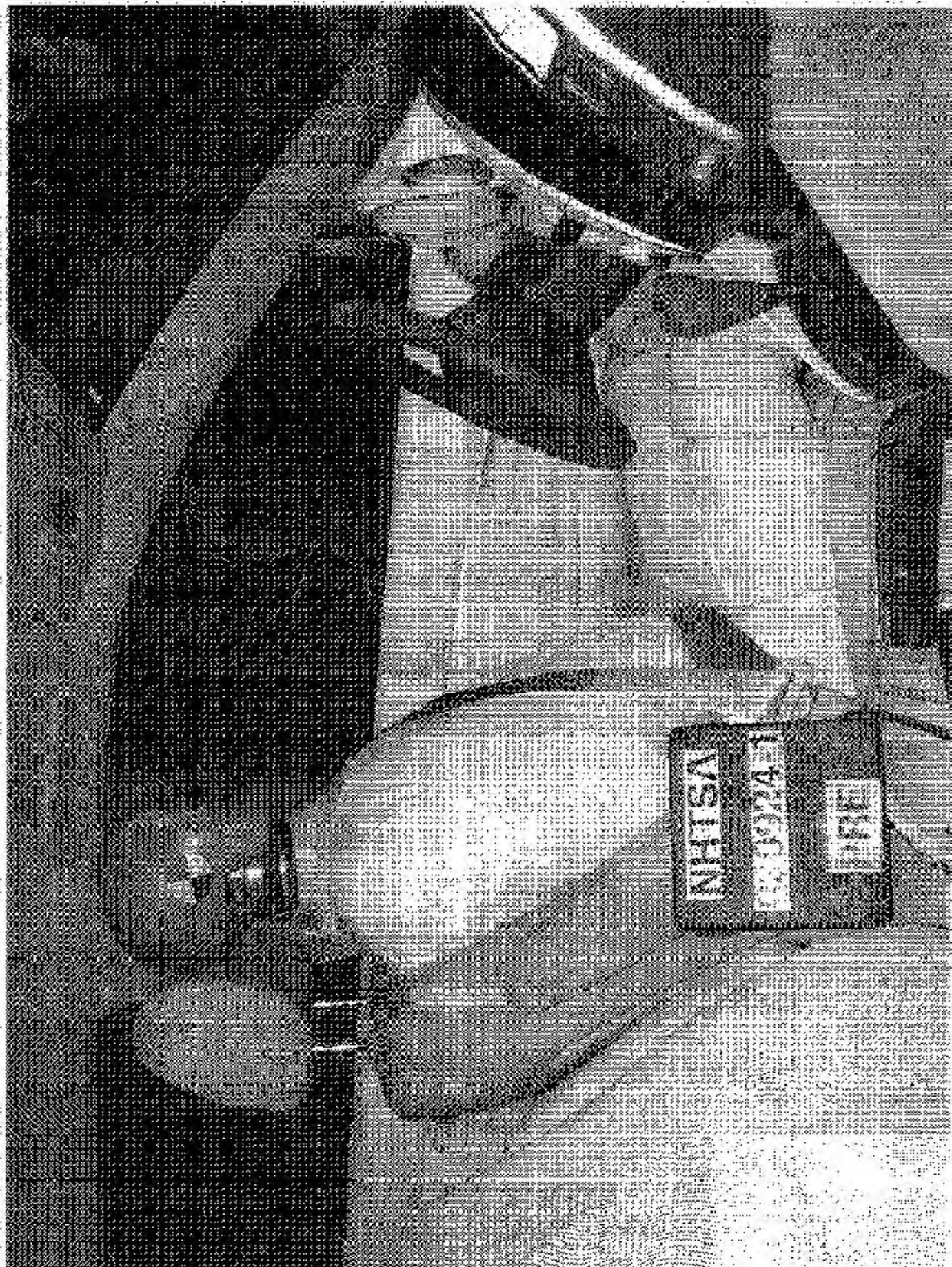


Figure A-22 Pre-Test Right Occupant Compartment View of Front SID Hill



Figure A-23 Post-Test Right Occupant Compartment View of Front SHD FIII



Figure A-24 Pre-Test Right Occupant Compartment View of Rear SID IIII

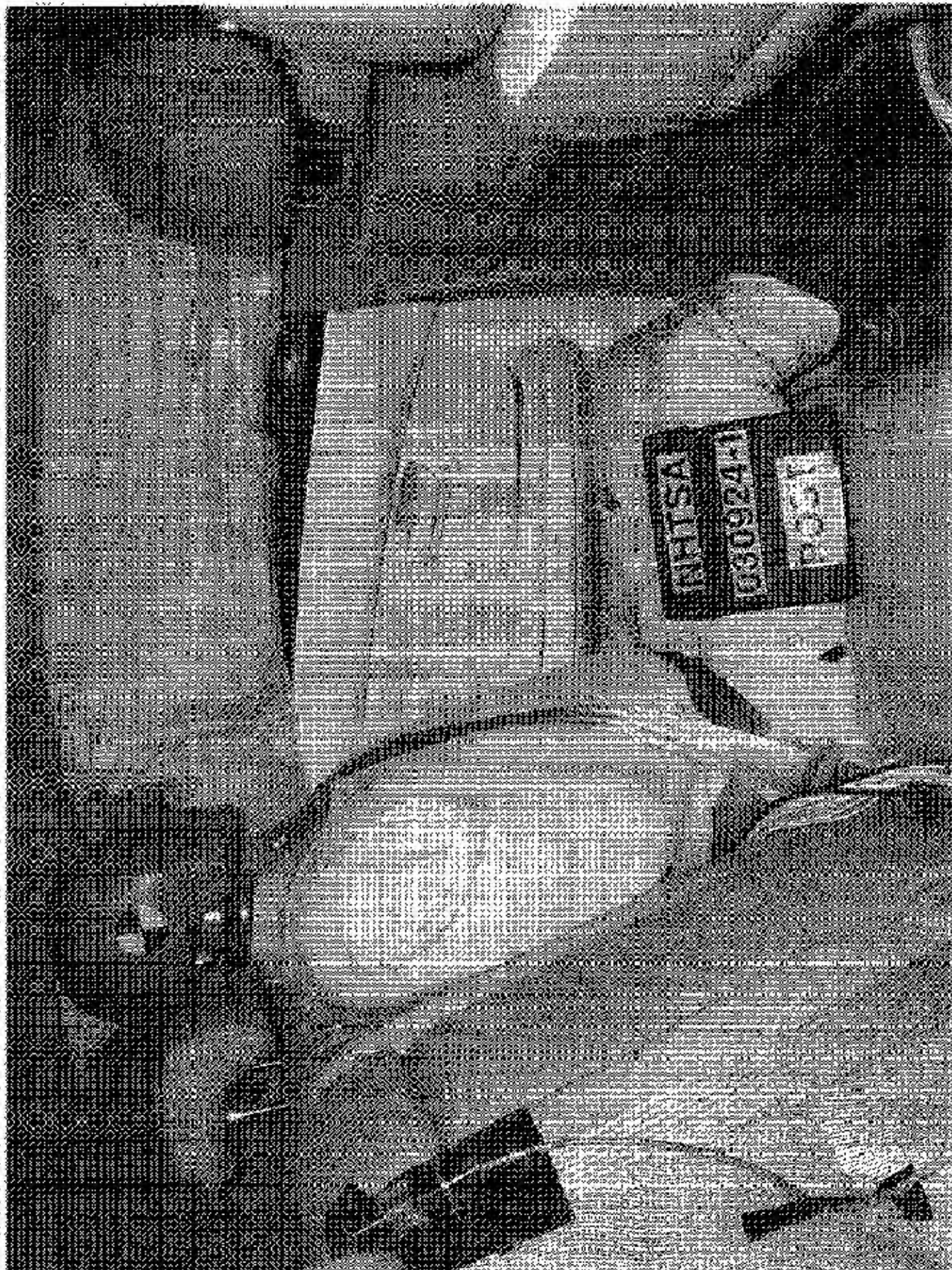


Figure A-25 Post-Test Right Occupant Compartment View of Rear STD IHIII

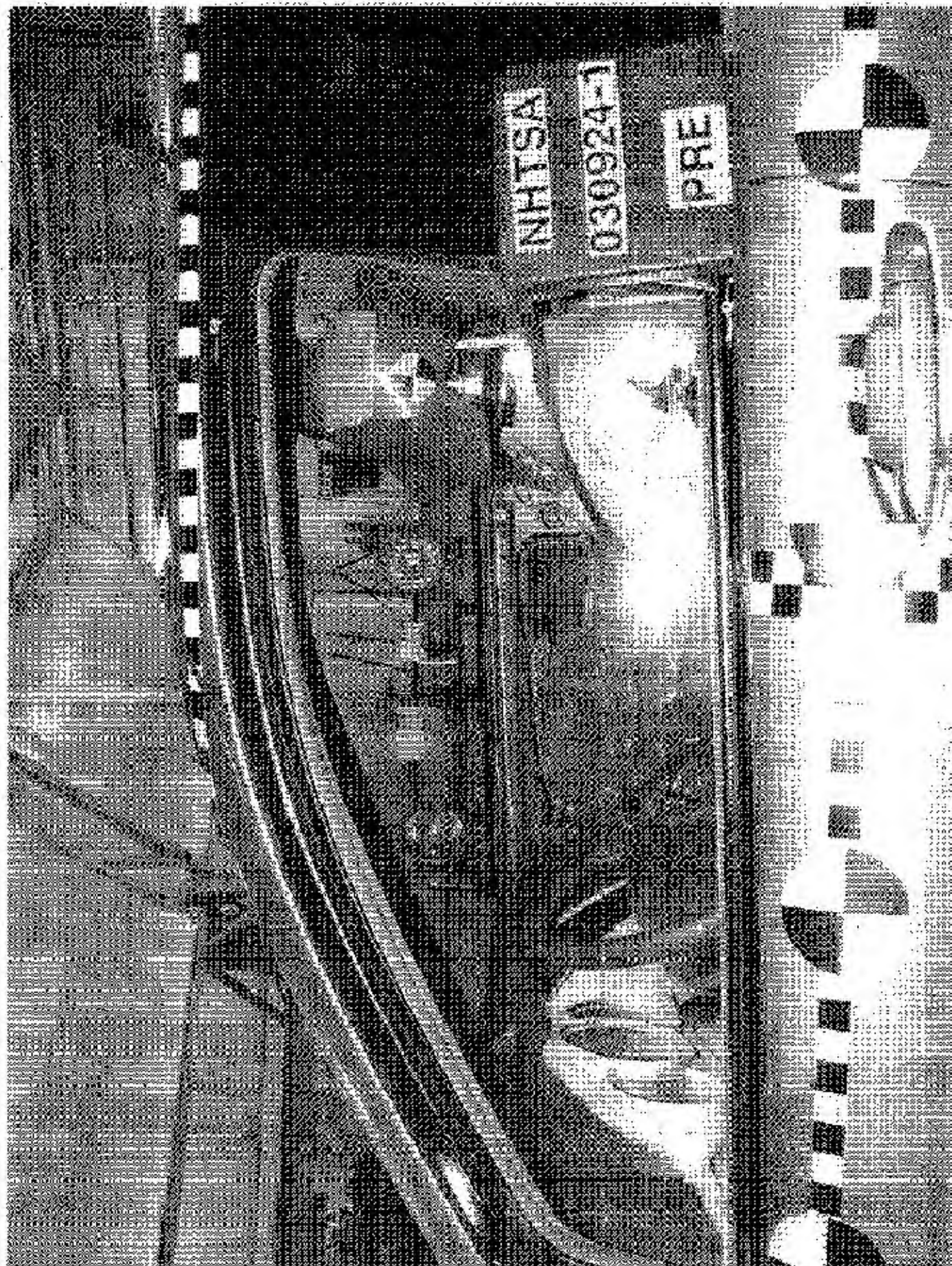


Figure A-26 Pre-Test Left View of Front SID IIII

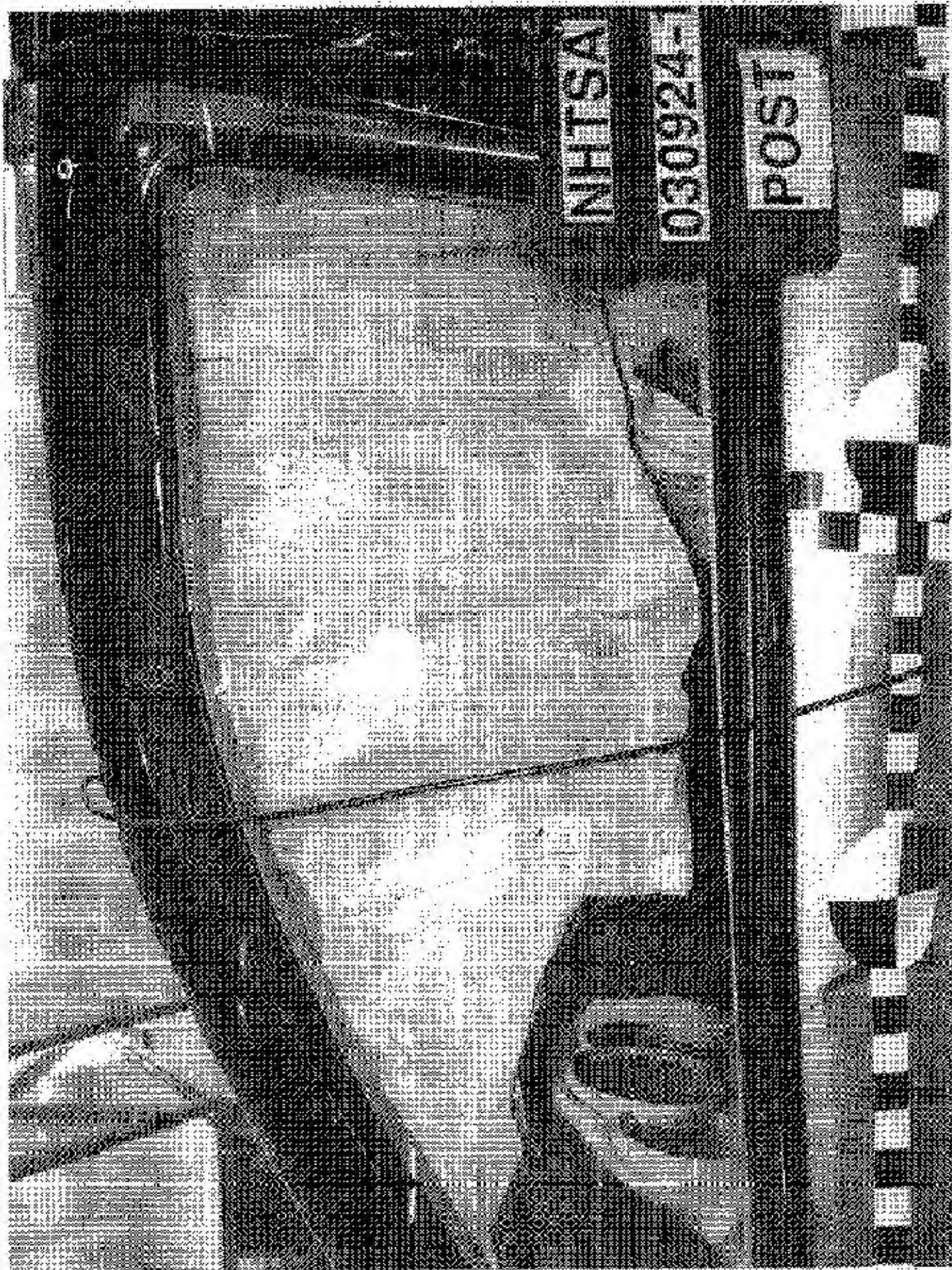


Figure A-27 Post-Test Left View of Front SID HIII

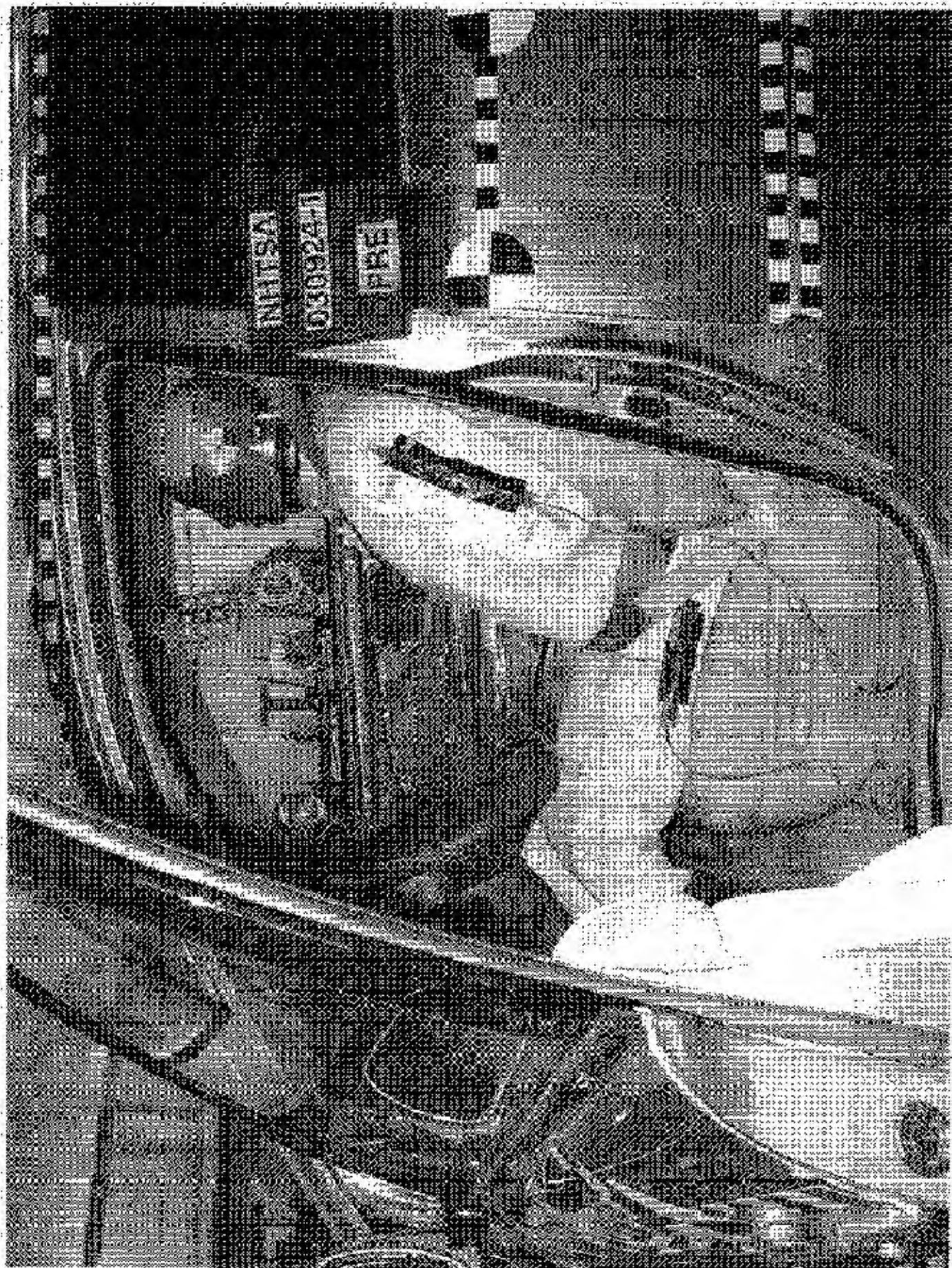


Figure A-28 Pre-Test Left View of Front SID H3H and Belt Position



Figure A-29 Pre-Test Front View of Front SID IIII and Door Clearance

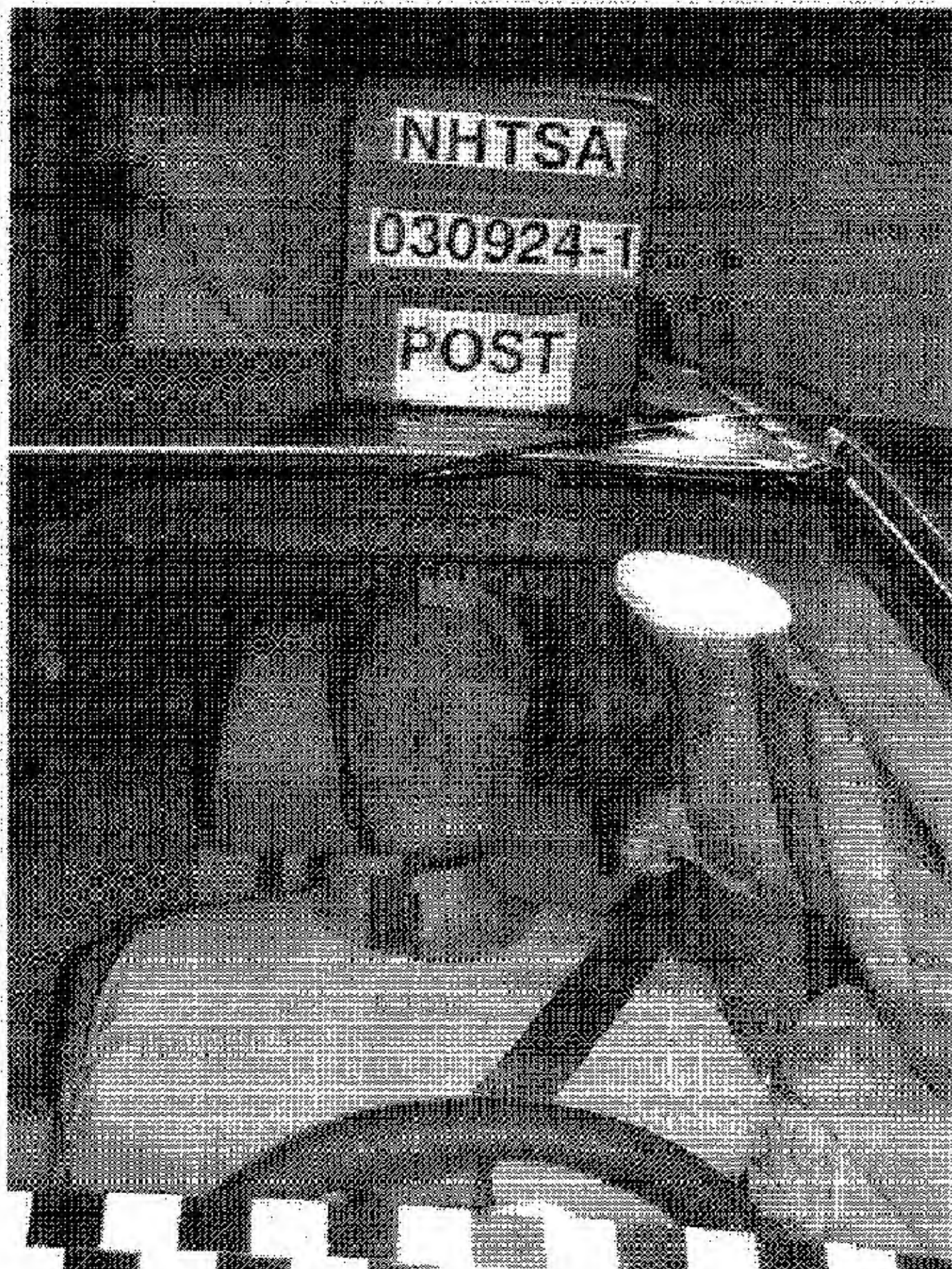


Figure A-30 Post-Test Front View of Front SID Hill and Door Clearance

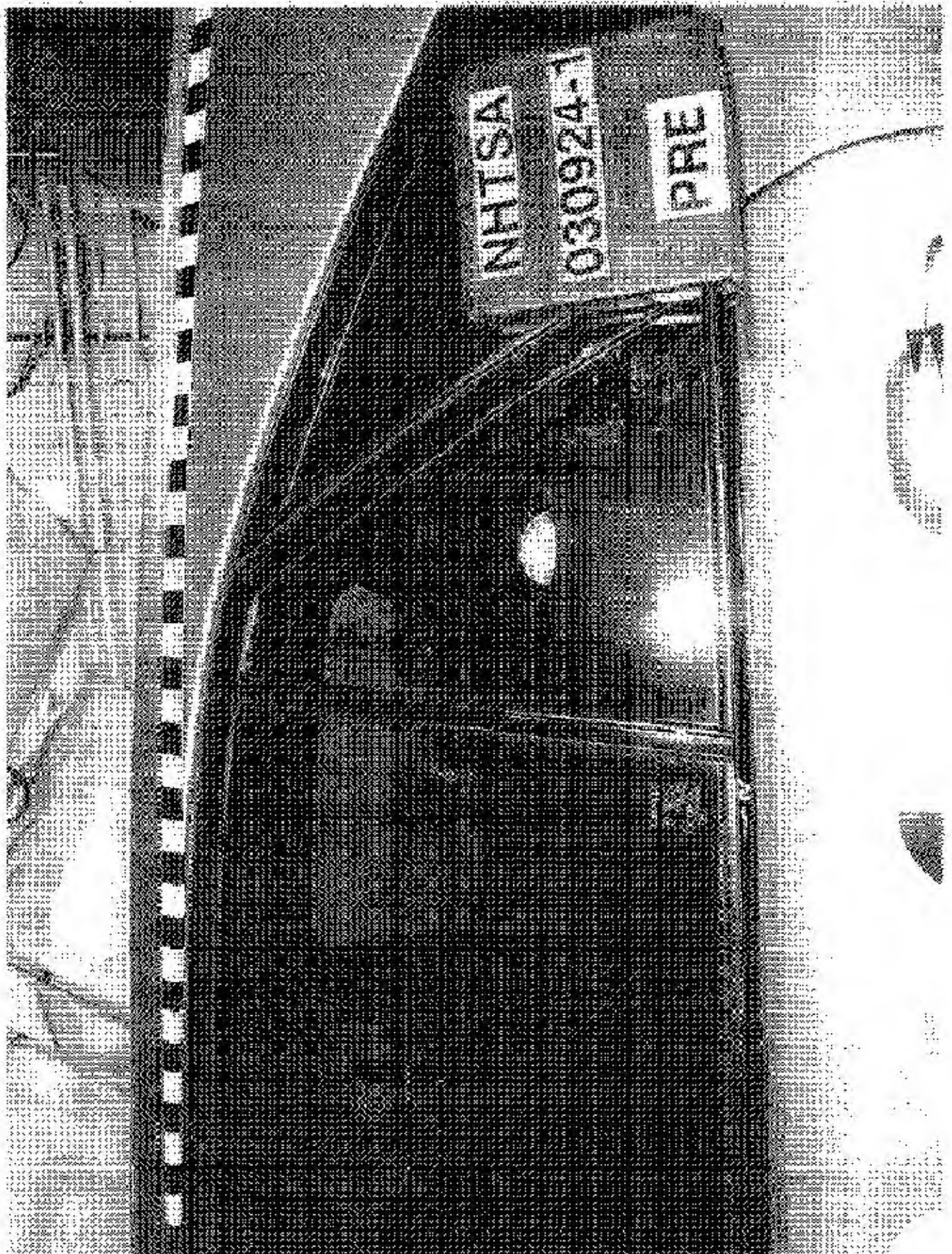


Figure A-31 Pre-Test Left View of Rear SID IIII

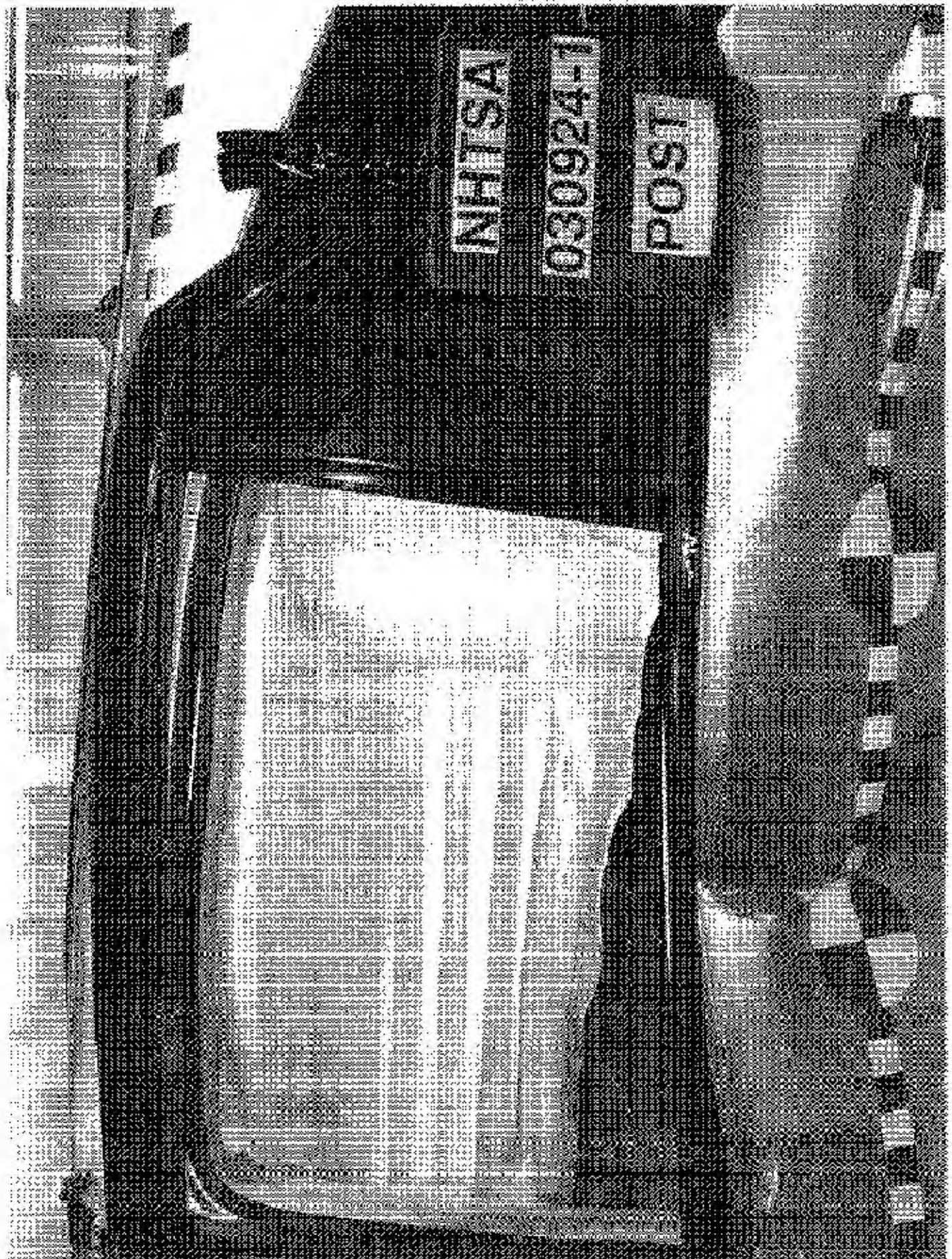


Figure A-32 Post-Test Left View of Rear SID HIT

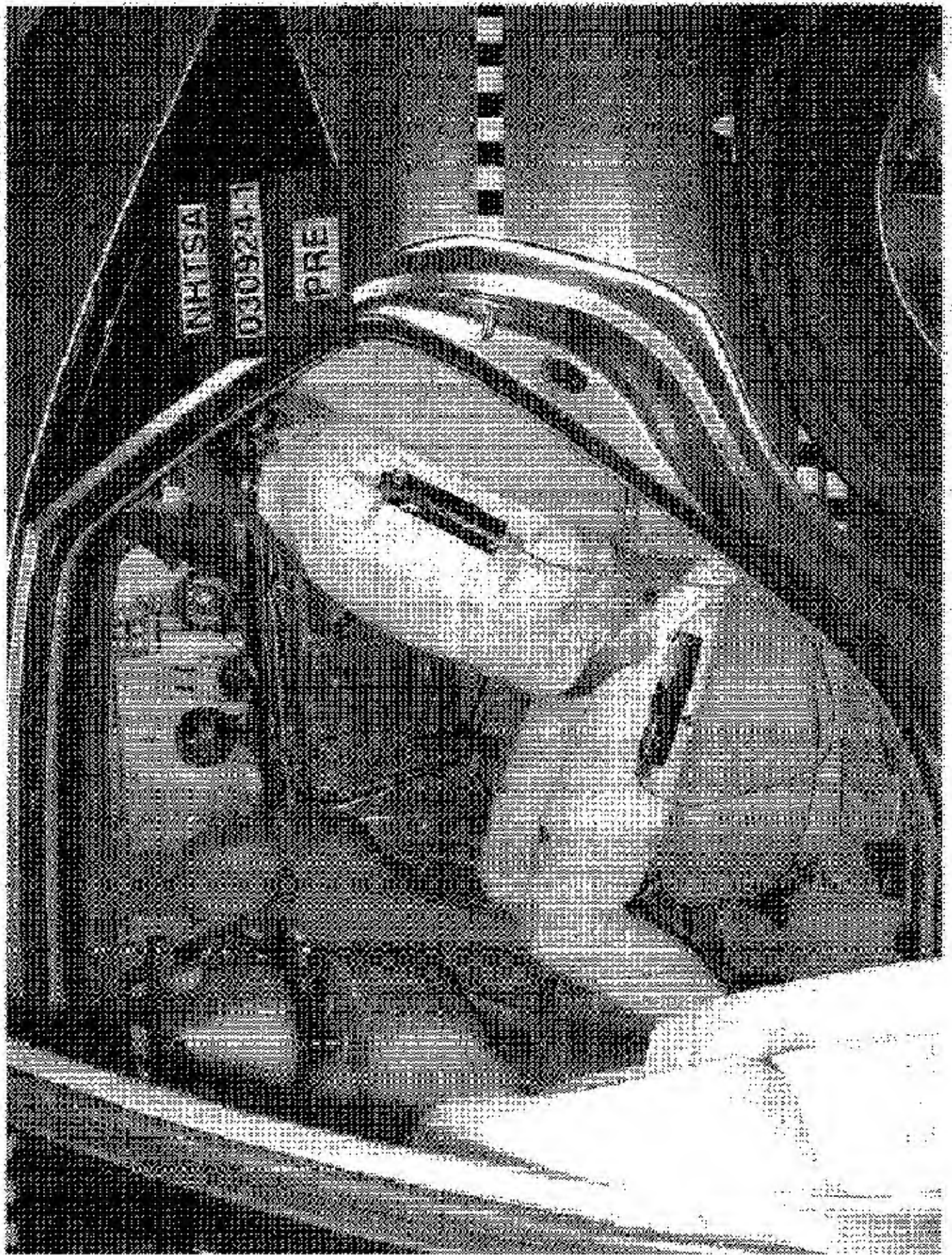


Figure A-33 Pre-Test Left View of Rear SID HII and Belt Position

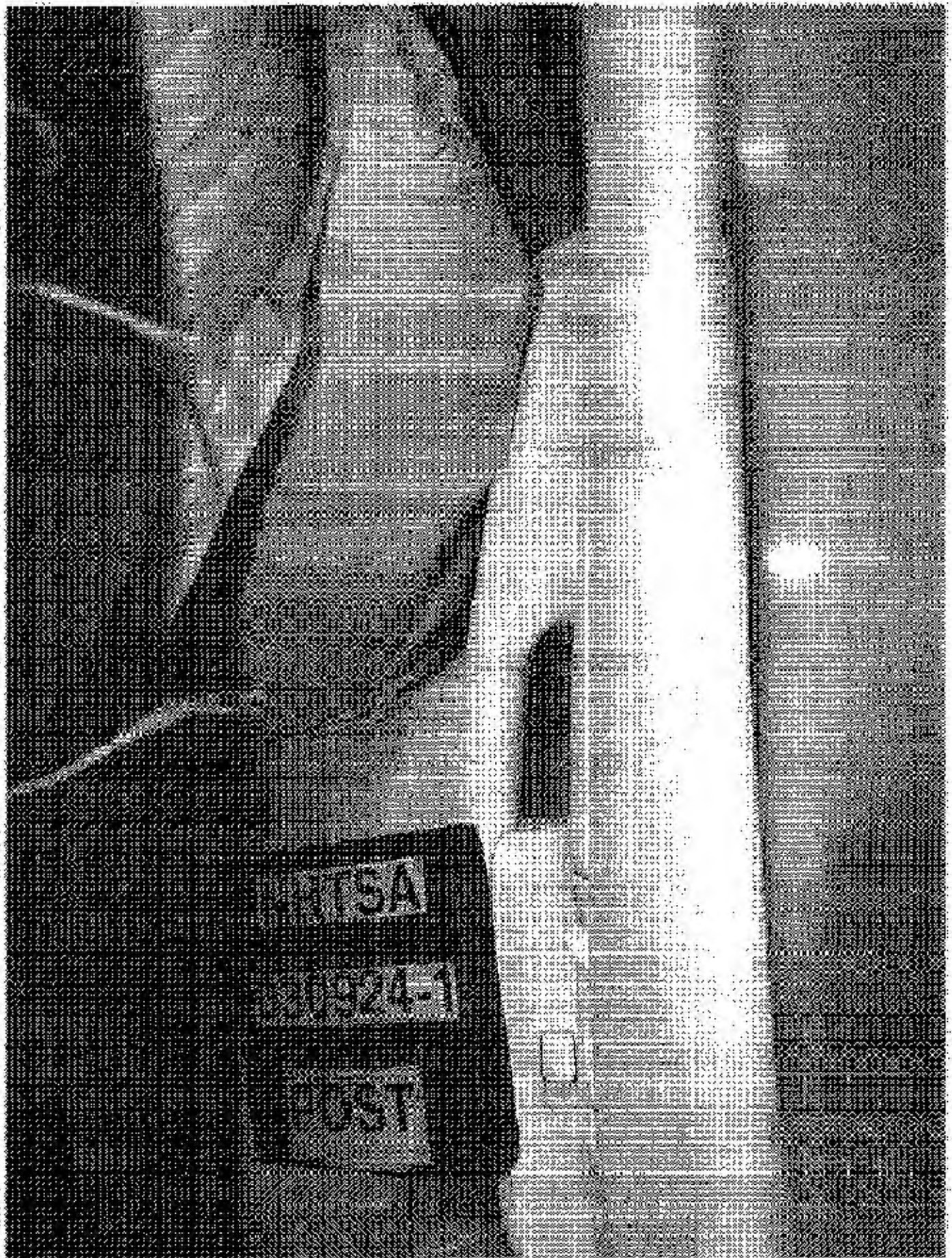


Figure A-34 Post-Test View of Rear SID Hill and Door Clearance

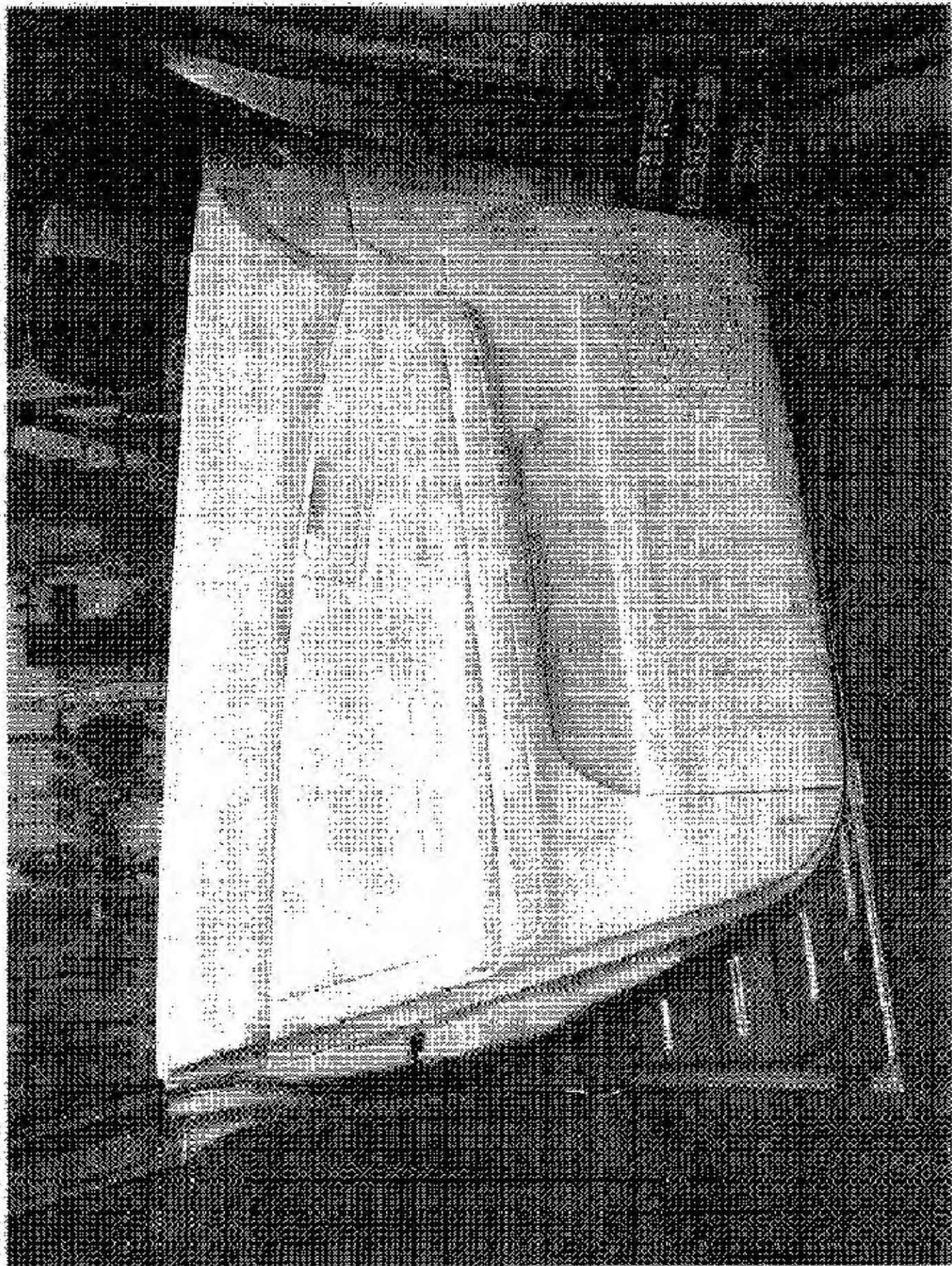


Figure A-35 Pre-Test Interior of Front Door

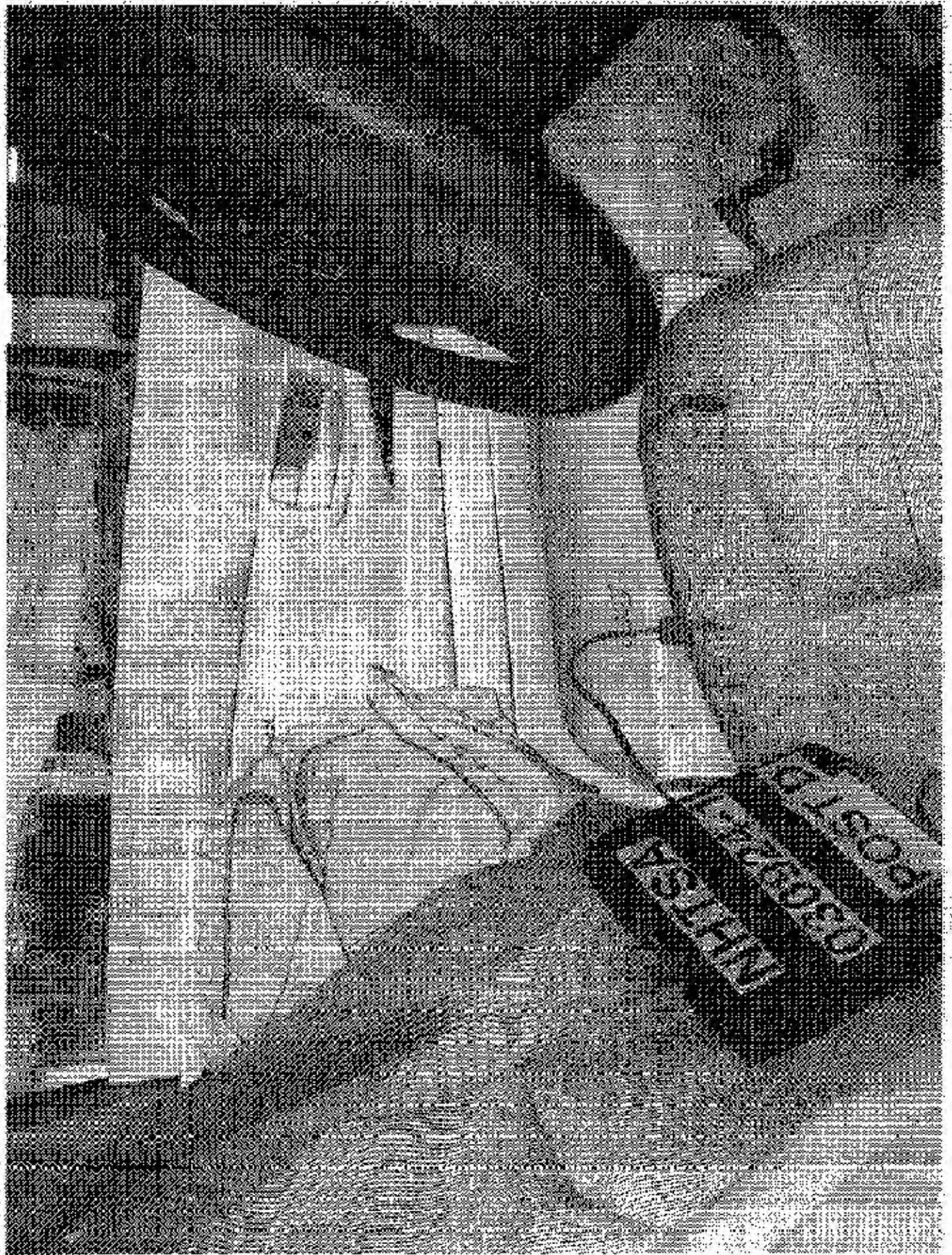


Figure A-36 Post-Test Interior of Front Door Showing SID HII Impact Locations



Figure A-37 Post-Test Front SLD HMI Contact - View 1



Figure A-38 Post-Test Front SID Hill Contact - View 2

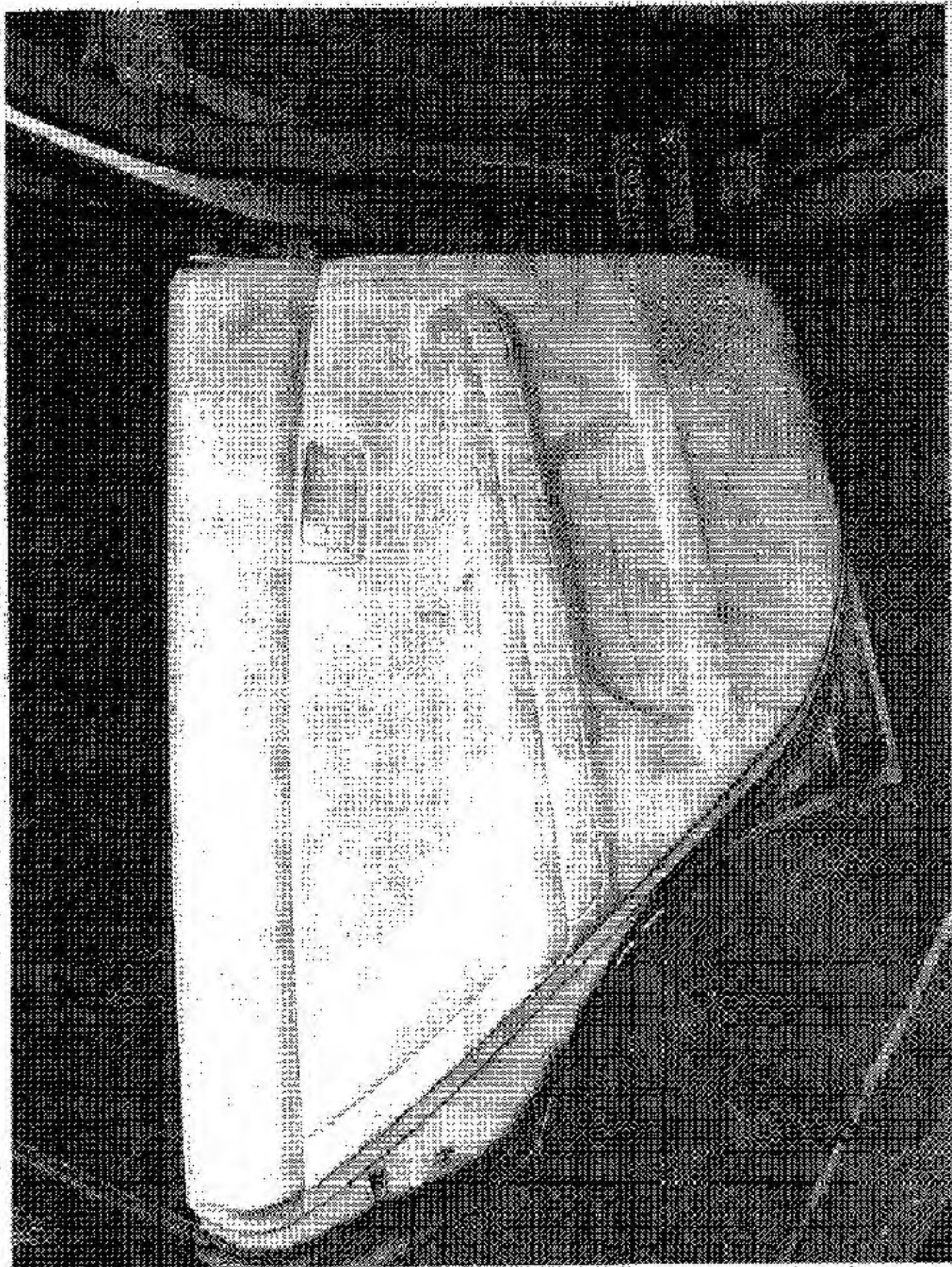


Figure A-39 Pre-Test Interior of Rear Panel

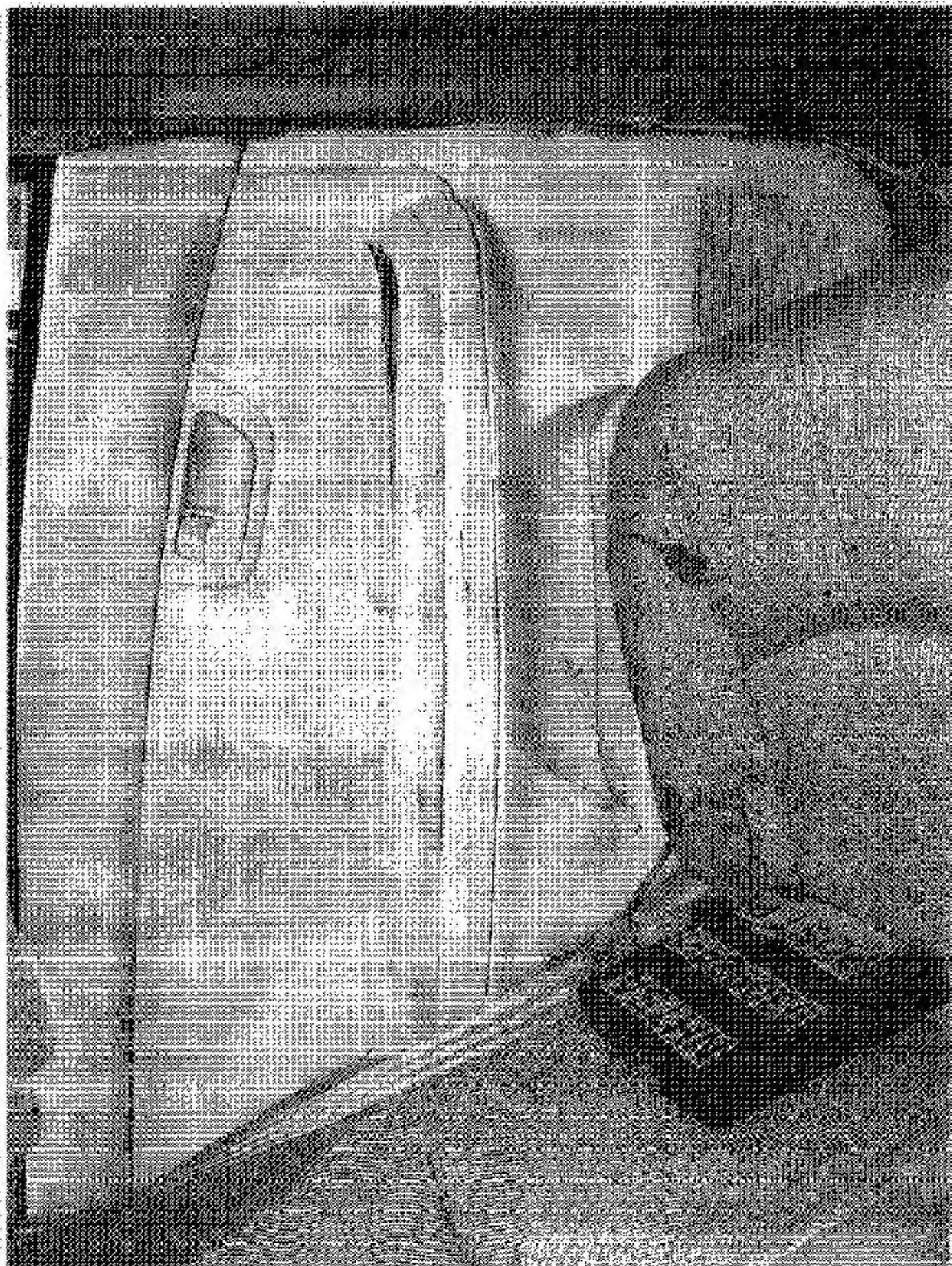


Figure A-40 Post-Test Interior of Rear Panel Showing SID HII Impact Locations



Figure A-41 Post-Test Rear SID Fill Contact View

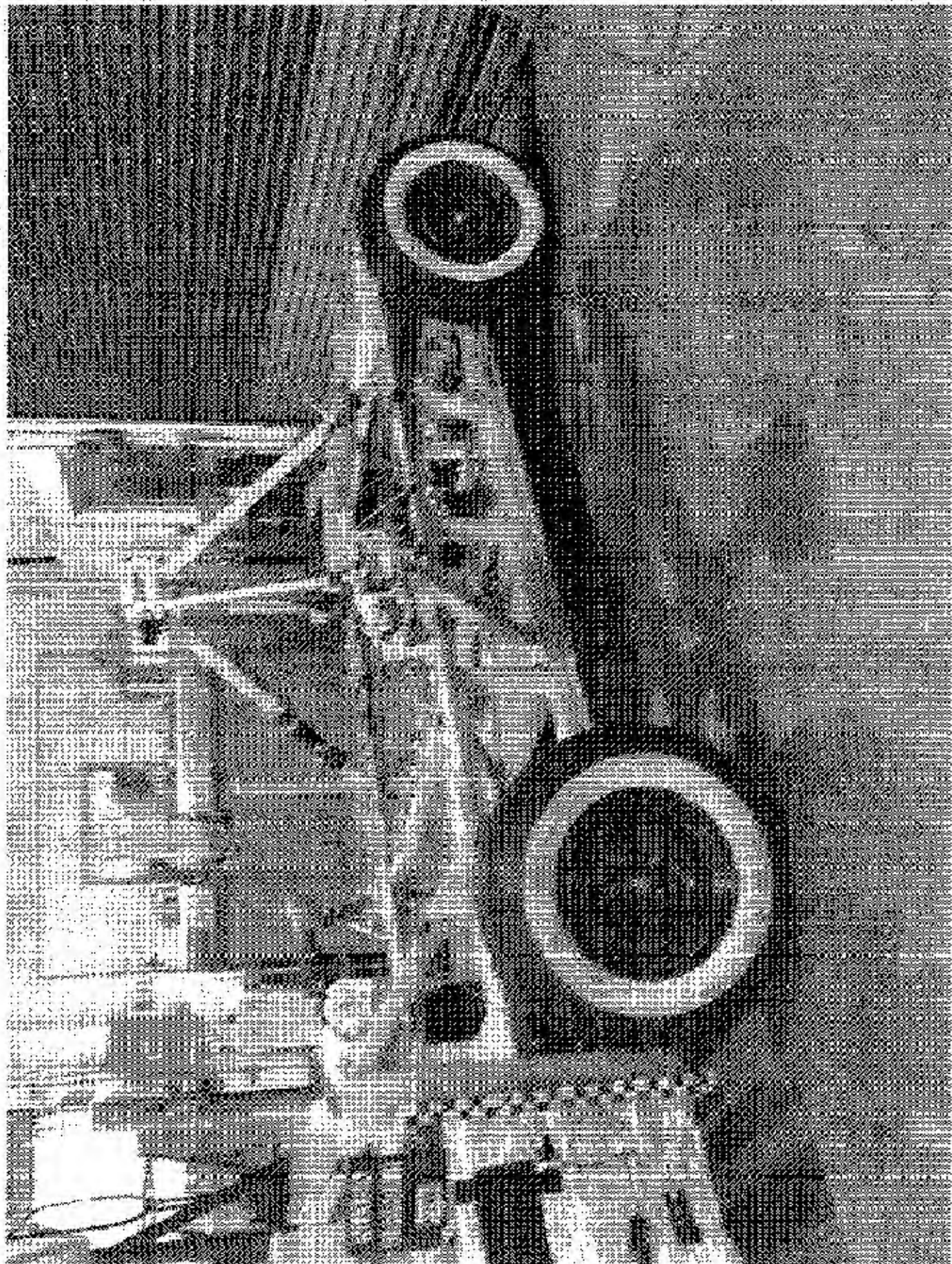


Figure A-42 Pre-Test Left Side View of MDB With Impactor Face In Position



Figure A-43 Pre-Test Primary Impact Point View



Figure A-44 Post-Test Primary Impact Point View



Figure A-45 Pre-Test Secondary Impact Point View



Figure A-46 Post-Test Secondary Impact Point View

7

DATE

DATE

MADE BY TOYOTA MOTOR CORPORATION

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

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1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

1000-1000-1000-1000

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY AND EMISSION PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.



C/IR 8R6/F400
ACTM. DIAZ/151E

MA331-AWACMA
MADE IN JAPAN

825

Figure A-47 Vehicle Certification Label View

TIRE-LOADING INFORMATION	
CHARGE MAXIMALE DU VEHICULE 420kg (925 LIVRES)	VEHICLE CAPACITY WEIGHT 420kg (925 lbs)
PESONNES AVANT 2 ARRIERE 3 TOTAL 5 DIMENSION DES PNEUS 225/65R17 101S	OCCUPANTS FRT.2 RR.3 TOTAL 5 TIRE SIZE 225/65R17 101S
PRESSION DE PNEUS (KPa (Lb/PO 2)) AU POIDS MAXIMAL DU VEHICULE CHARGE AVANT 210(30) ARRIERE 210(30) POUR DE PLUS AMPLES DETAILS VOIR LE MANUEL DU PROPRIETAIRE	COLD TIRE PRESSURE (kPa (psi)) UP TO VEHICLE CAPACITY WEIGHT FRT.210(30) RR.210(30) SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION

4 6 1 1 0

2 Q

Figure A-48 Vehicle Recommended Tire Pressure Label View

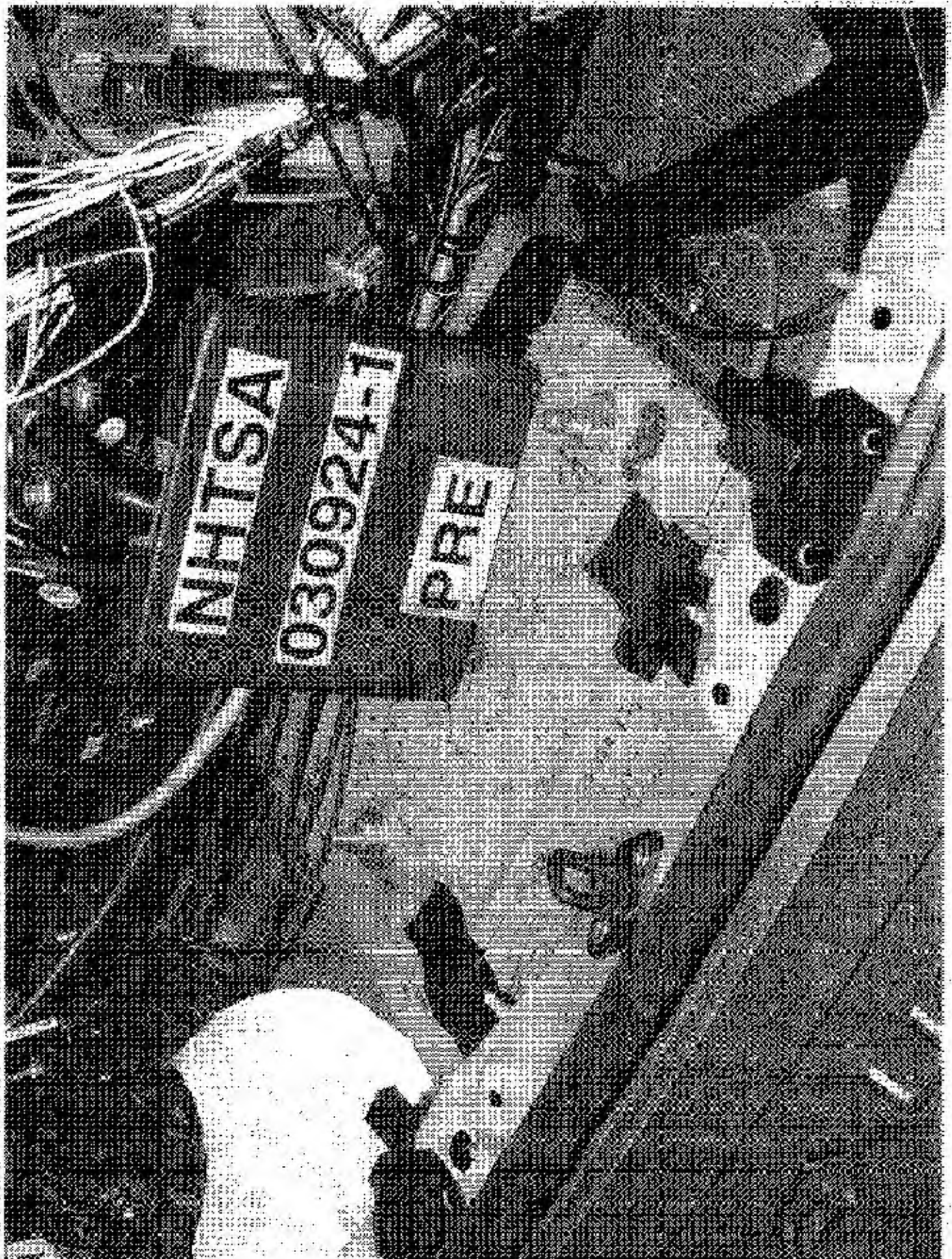


Figure A-40 Pre-Test Vehicle Ballast View

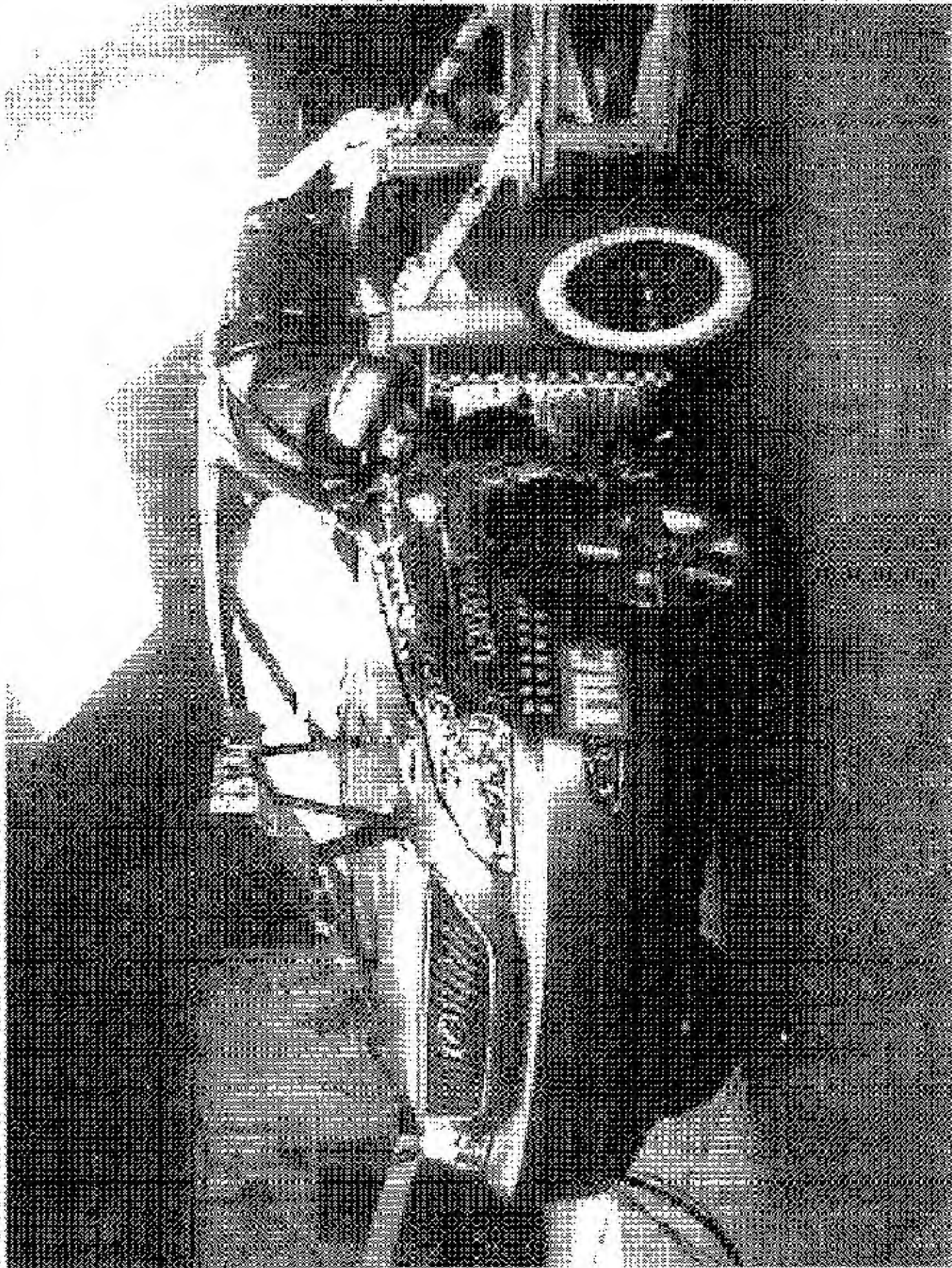


Figure A-50 Impact Event



Figure A-51 Pre-Test Fuel Cap



Figure A-52 Post-Test Fuel Cap

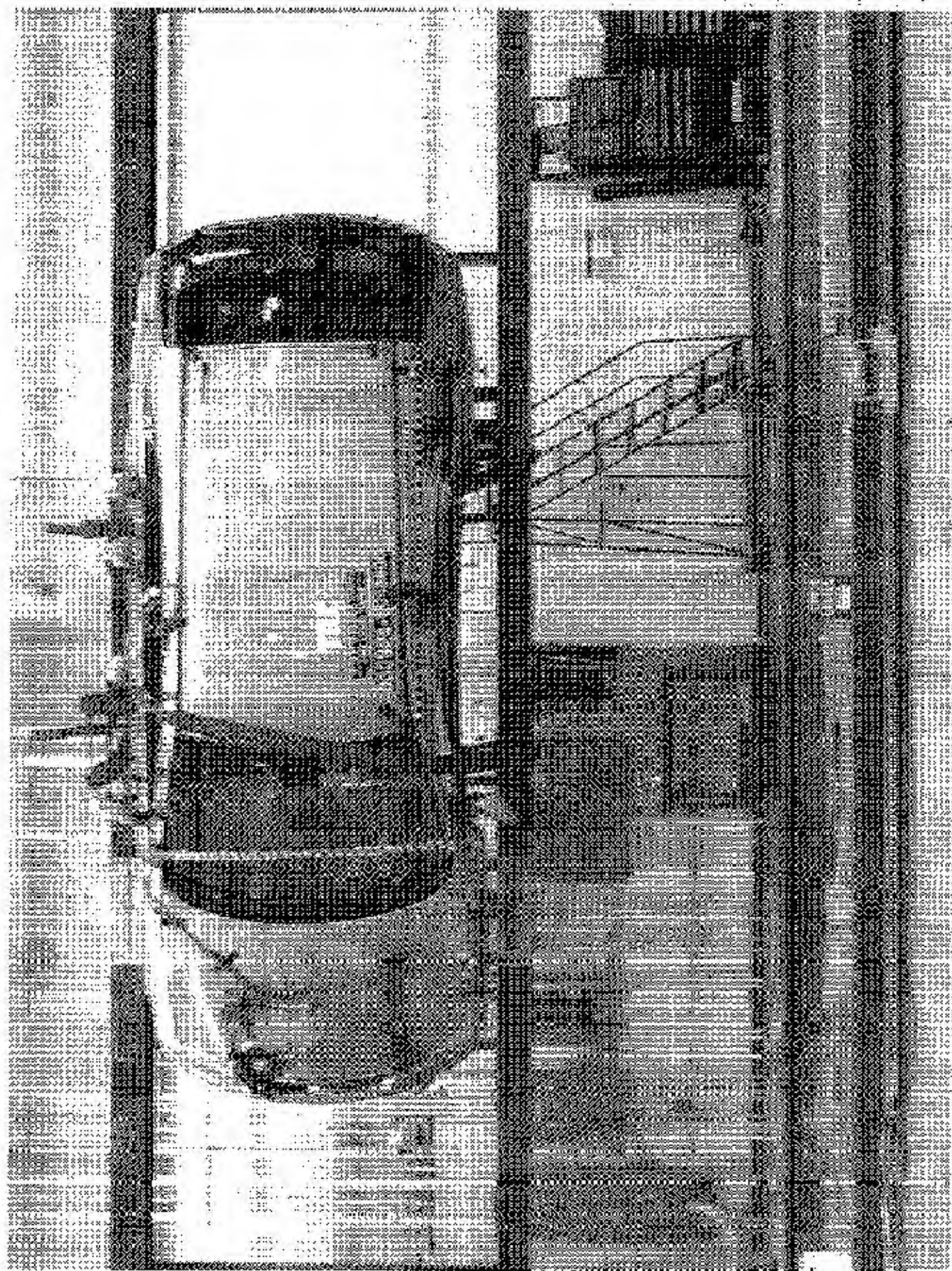


Figure A-53 FMVSS 301 Rollover View at 90°

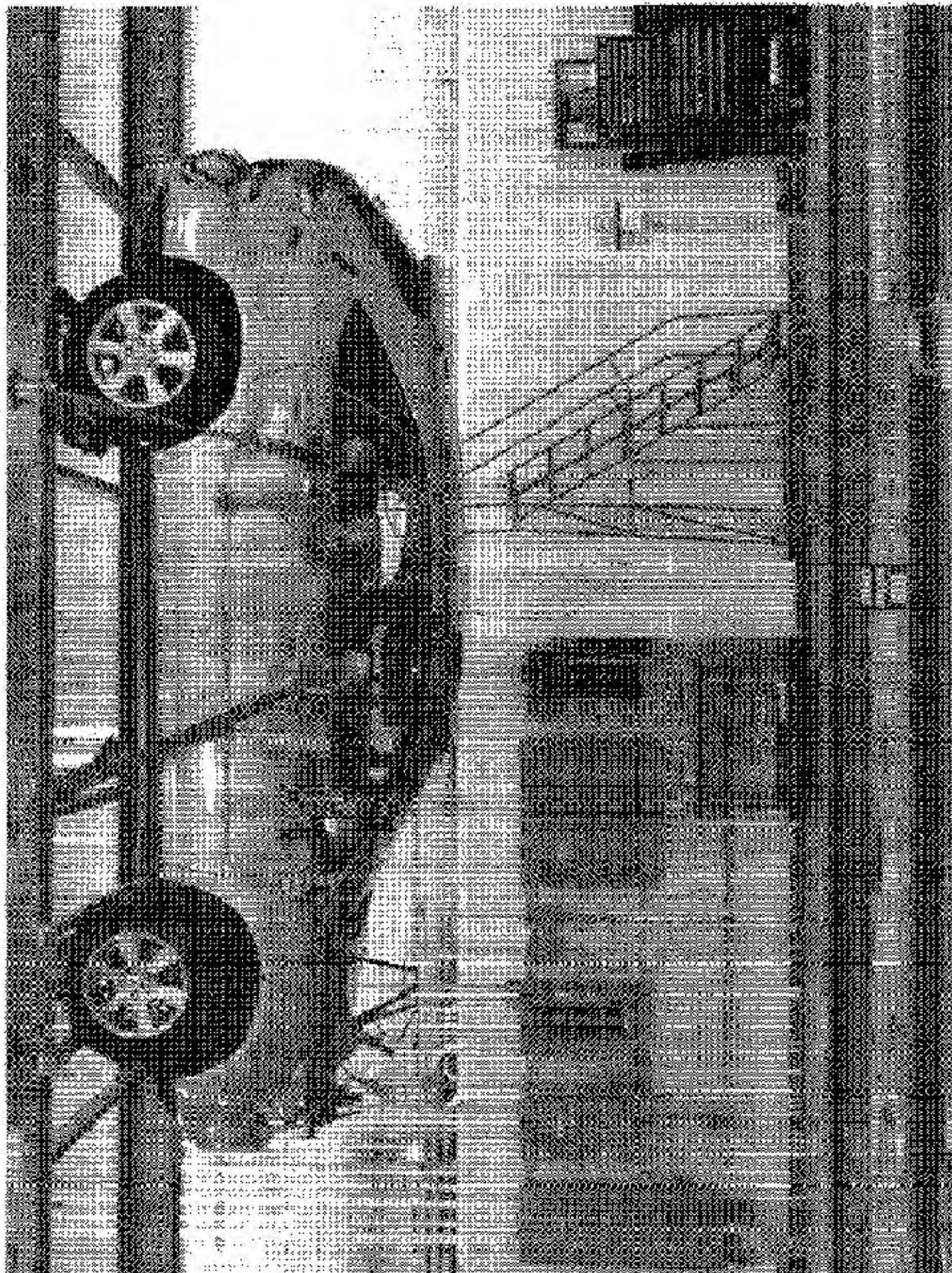


Figure A-54 FMVSS 301 Rollover View at 180°

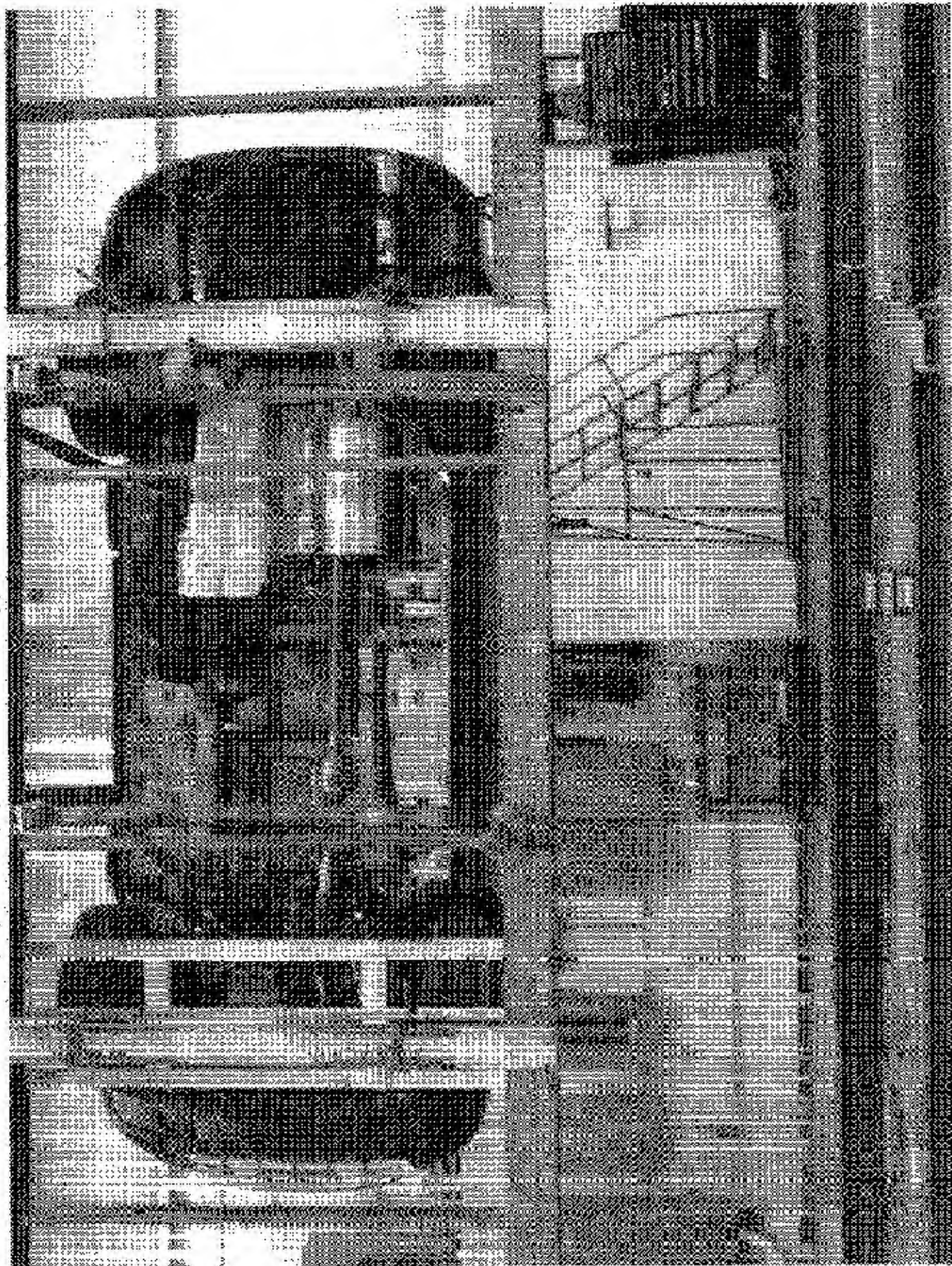


Figure A-55 FMVSS 301 Rollover View at 270°

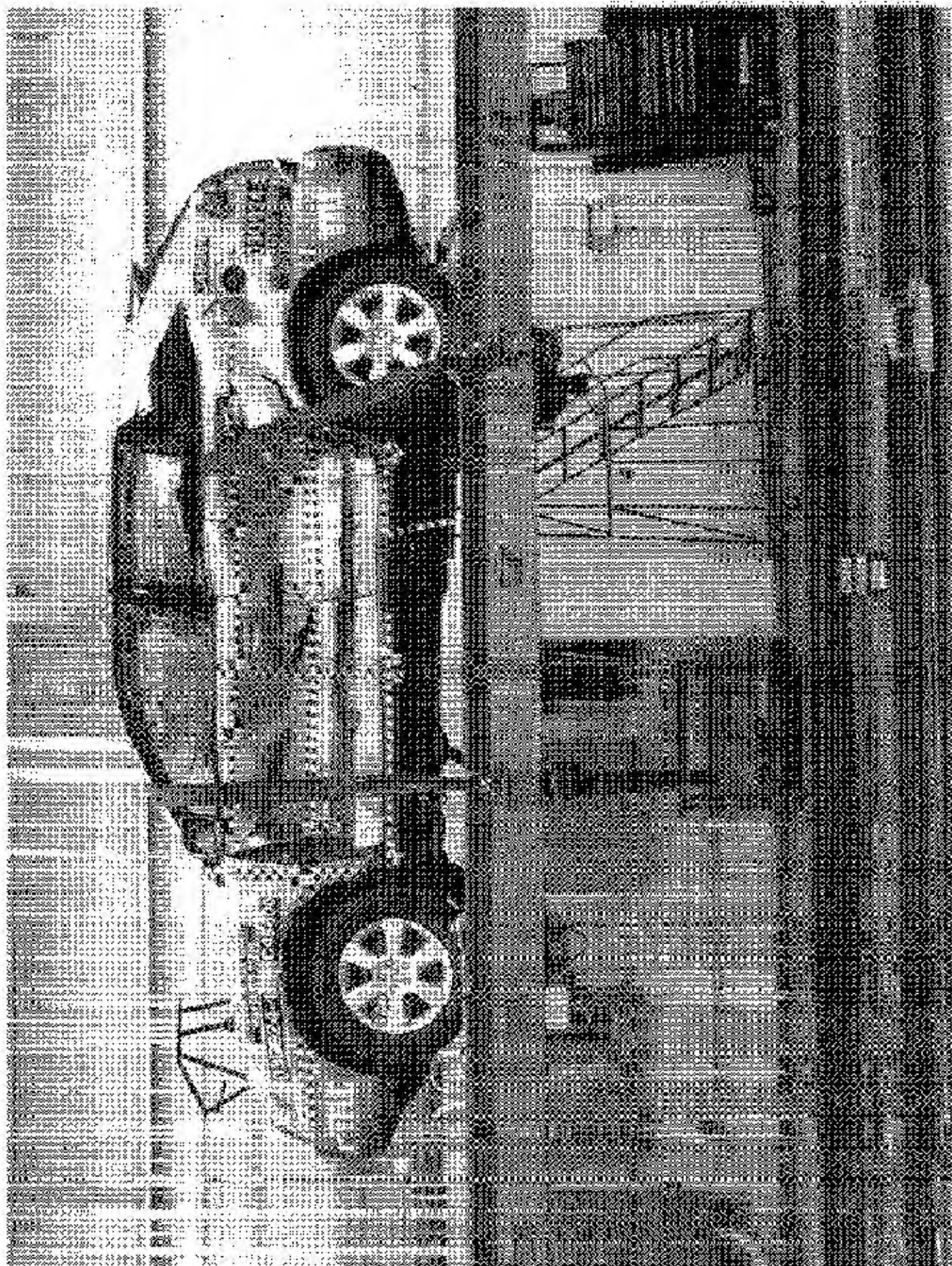


Figure A-56 FMVSS 301 Rollover View at 360°

Appendix B

Data Plots

Table of Data Plots

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head X-Axis Velocity	B-11
3	Driver Head Y-Axis Acceleration	B-12
4	Driver Head Y-Axis Velocity	B-13
5	Driver Head Z-Axis Acceleration	B-14
6	Driver Head Z-Axis Velocity	B-15
7	Driver Head Resultant Acceleration	B-16
8	Driver Head Resultant Redundant Acceleration	B-17
9	Driver Neck X-Axis Shear Force	B-18
10	Driver Neck Y-Axis Shear Force	B-19
11	Driver Neck Z-Axis Axial Force	B-20
12	Driver Neck Moment about X Axis	B-21
13	Driver Neck Moment about Y Axis	B-22
14	Driver Neck Moment about Z Axis	B-23
15	Driver Neck Occipital Condyle Moment about X Axis	B-24
16	Driver Upper Rib Y-Axis Acceleration	B-25
17	Driver Upper Rib Y-Axis Velocity	B-26
18	Driver Lower Rib Y-Axis Acceleration	B-27
19	Driver Lower Rib Y-Axis Velocity	B-28
20	Driver Lower Spine Y-Axis Acceleration	B-29
21	Driver Lower Spine Y-Axis Velocity	B-30
22	Driver Pelvis Y-Axis Acceleration	B-31
23	Driver Pelvis Y-Axis Velocity	B-32
24	Left Rear Passenger Head X-Axis Acceleration	B-33

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots (Continued)

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
25	Left Rear Passenger Head X-Axis Velocity	B-34
26	Left Rear Passenger Head Y-Axis Acceleration	B-35
27	Left Rear Passenger Head Y-Axis Velocity	B-36
28	Left Rear Passenger Head Z-Axis Acceleration	B-37
29	Left Rear Passenger Head Z-Axis Velocity	B-38
30	Left Rear Passenger Head Resultant Acceleration	B-39
31	Left Rear Passenger Head Resultant Redundant Acceleration	B-40
32	Left Rear Passenger Neck X-Axis Shear Force	B-41
33	Left Rear Passenger Neck Y-Axis Shear Force	B-42
34	Left Rear Passenger Neck Z-Axis Axial Force	B-43
35	Left Rear Passenger Neck Moment about X Axis	B-44
36	Left Rear Passenger Neck Moment about Y Axis	B-45
37	Left Rear Passenger Neck Moment about Z Axis	B-46
38	Left Rear Passenger Neck Occipital Condyle Moment about X Axis	B-47
39	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-48
40	Left Rear Passenger Upper Rib Y-Axis Velocity	B-49
41	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-50
42	Left Rear Passenger Lower Rib Y-Axis Velocity	B-51
43	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-52
44	Left Rear Passenger Lower Spine Y-Axis Velocity	B-53
45	Left Rear Passenger Pelvis Y-Axis Acceleration	B-54
46	Left Rear Passenger Pelvis Y-Axis Velocity	B-55

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
47	Driver Head X-Axis Redundant Acceleration	B-57
48	Driver Head X-Axis Redundant Velocity	B-58
49	Driver Head Y-Axis Redundant Acceleration	B-59
50	Driver Head Y-Axis Redundant Velocity	B-60
51	Driver Head Z-Axis Redundant Acceleration	B-61
52	Driver Head Z-Axis Redundant Velocity	B-62
53	Driver Upper Rib Y-Axis Redundant Acceleration	B-63
54	Driver Upper Rib Y-Axis Redundant Velocity	B-64
55	Driver Lower Rib Y-Axis Redundant Acceleration	B-65
56	Driver Lower Rib Y-Axis Redundant Velocity	B-66
57	Driver Lower Spine Y-Axis Redundant Acceleration	B-67
58	Driver Lower Spine Y-Axis Redundant Velocity	B-68
59	Driver Pelvis Y-Axis Redundant Acceleration	B-69
60	Driver Pelvis Y-Axis Redundant Velocity	B-70
61	Driver Shoulder Contact Switch	B-71
62	Driver Pelvis Contact Switch	B-72
63	Left Rear Passenger Head X-Axis Redundant Acceleration	B-73
64	Left Rear Passenger Head X-Axis Redundant Velocity	B-74
65	Left Rear Passenger Head Y-Axis Redundant Acceleration	B-75
66	Left Rear Passenger Head Y-Axis Redundant Velocity	B-76
67	Left Rear Passenger Head Z-Axis Redundant Acceleration	B-77
68	Left Rear Passenger Head Z-Axis Redundant Velocity	B-78
69	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-79
70	Left Rear Passenger Upper Rib Y-Axis Redundant Velocity	B-80
71	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-81
72	Left Rear Passenger Lower Rib Y-Axis Redundant Velocity	B-82
73	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-83
74	Left Rear Passenger Lower Spine Y-Axis Redundant Velocity	B-84
75	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-85
76	Left Rear Passenger Pelvis Y-Axis Redundant Velocity	B-86
77	Left Rear Passenger Shoulder Contact Switch	B-87
78	Left Rear Passenger Pelvis Contact Switch	B-88

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
79	Right Side Sill at Front Seat X-Axis Acceleration	B-90
80	Right Side Sill at Front Seat X-Axis Velocity	B-91
81	Right Side Sill at Front Seat Y-Axis Acceleration	B-92
82	Right Side Sill at Front Seat Y-Axis Velocity	B-93
83	Right Side Sill at Front Seat Z-Axis Acceleration	B-94
84	Right Side Sill at Front Seat Z-Axis Velocity	B-95
85	Right Side Sill at Front Seat Resultant Acceleration	B-96
86	Right Side Sill at Rear Seat X-Axis Acceleration	B-97
87	Right Side Sill at Rear Seat X-Axis Velocity	B-98
88	Right Side Sill at Rear Seat Y-Axis Acceleration	B-99
89	Right Side Sill at Rear Seat Y-Axis Velocity	B-100
90	Right Side Sill at Rear Seat Z-Axis Acceleration	B-101
91	Right Side Sill at Rear Seat Z-Axis Velocity	B-102
92	Right Side Sill at Rear Seat Resultant Acceleration	B-103
93	Rear Floorpan Above Axle X-Axis Acceleration	B-104
94	Rear Floorpan Above Axle X-Axis Velocity	B-105
95	Rear Floorpan Above Axle Y-Axis Acceleration	B-106
96	Rear Floorpan Above Axle Y-Axis Velocity	B-107
97	Rear Floorpan Above Axle Z-Axis Acceleration	B-108
98	Rear Floorpan Above Axle Z-Axis Velocity	B-109
99	Rear Floorpan Above Axle Resultant Acceleration	B-110
100	Left Side Sill at Front Seat Y-Axis Acceleration	B-111
101	Left Side Sill at Front Seat Y-Axis Velocity	B-112
102	Left Side Sill at Front Seat Y-Axis Displacement	B-113

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots (Continued)
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
103	Left Side Sill at Rear Seat Y-Axis Acceleration	B-114
104	Left Side Sill at Rear Seat Y-Axis Velocity	B-115
105	Left Side Sill at Rear Seat Y-Axis Displacement	B-116
106	Right Rear Occupant Compartment Y-Axis Acceleration	B-117
107	Right Rear Occupant Compartment Y-Axis Velocity	B-118
108	Right Rear Occupant Compartment Y-Axis Displacement	B-119
109	Left Lower A-Post Y-Axis Acceleration	B-120
110	Left Lower A-Post Y-Axis Velocity	B-121
111	Left Middle A-Post Y-Axis Acceleration	B-122
112	Left Middle A-Post Y-Axis Velocity	B-123
113	Left Lower B-Post Y-Axis Acceleration	B-124
114	Left Lower B-Post Y-Axis Velocity	B-125
115	Left Middle B-Post Y-Axis Acceleration	B-126
116	Left Middle B-Post Y-Axis Velocity	B-127
117	Left Front Seat Track Y-Axis Acceleration	B-128
118	Left Front Seat Track Y-Axis Velocity	B-129
119	Left Rear Seat Track Y-Axis Acceleration	B-130
120	Left Rear Seat Track Y-Axis Velocity	B-131
121	Vehicle Center of Gravity X-Axis Acceleration	B-132
122	Vehicle Center of Gravity X-Axis Velocity	B-133
123	Vehicle Center of Gravity Y-Axis Acceleration	B-134
124	Vehicle Center of Gravity Y-Axis Velocity	B-135
125	Vehicle Center of Gravity Z-Axis Acceleration	B-136
126	Vehicle Center of Gravity Z-Axis Velocity	B-137
127	Vehicle Center of Gravity Resultant Acceleration	B-138

Table of Data Plots (Continued)

MDB Instrumentation Plots

Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
128	MDB Center of Gravity X-Axis Acceleration	B-140
129	MDB Center of Gravity X-Axis Velocity	B-141
130	MDB Center of Gravity Y-Axis Acceleration	B-142
131	MDB Center of Gravity Y-Axis Velocity	B-143
132	MDB Center of Gravity Z-Axis Acceleration	B-144
133	MDB Center of Gravity Z-Axis Velocity	B-145
134	MDB Center of Gravity Resultant Acceleration	B-146
135	MDB Left Rear X-Axis Acceleration	B-147
136	MDB Left Rear X-Axis Velocity	B-148
137	MDB Left Rear Y-Axis Acceleration	B-149
138	MDB Left Rear Y-Axis Velocity	B-150
139	MDB Right Side Contact Switch	B-151
140	MDB Left Side Contact Switch	B-152

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
141	Driver Upper Rib Y-Axis Acceleration	B-154
142	Driver Lower Rib Y-Axis Acceleration	B-155
143	Driver Lower Spine Y-Axis Acceleration	B-156
144	Driver Pelvis Y-Axis Acceleration	B-157
145	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-158
146	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-159
147	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-160
148	Left Rear Passenger Pelvis Y-Axis Acceleration	B-161
149	Driver Upper Rib Y-Axis Redundant Acceleration	B-162
150	Driver Lower Rib Y-Axis Redundant Acceleration	B-163
151	Driver Lower Spine Y-Axis Redundant Acceleration	B-164
152	Driver Pelvis Y-Axis Redundant Acceleration	B-165
153	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-166
154	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-167
155	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-168
156	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-169

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

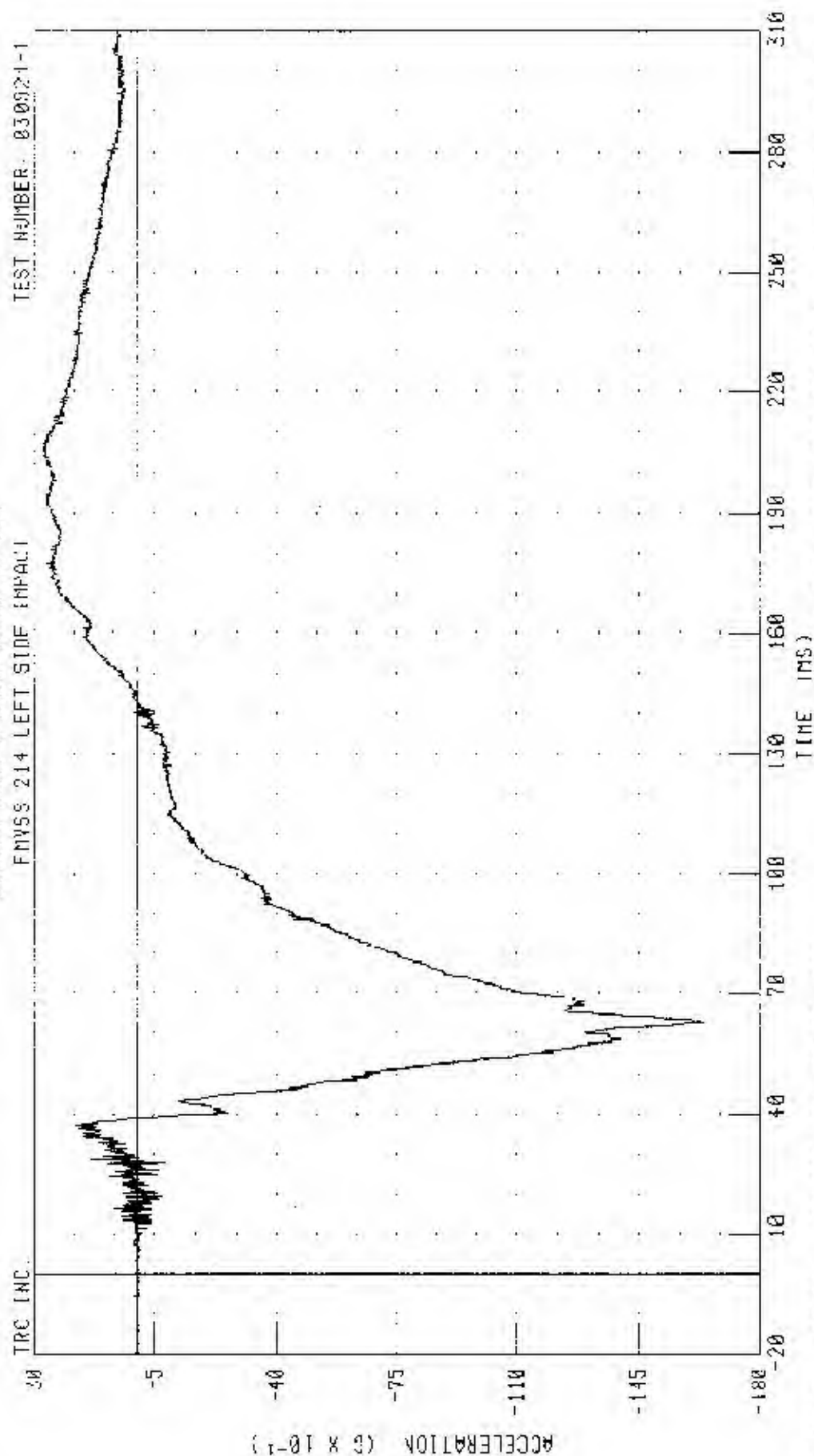
Contact Data - Filter Class 1000

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL HEADX01 FILTER CH CLASS 1000

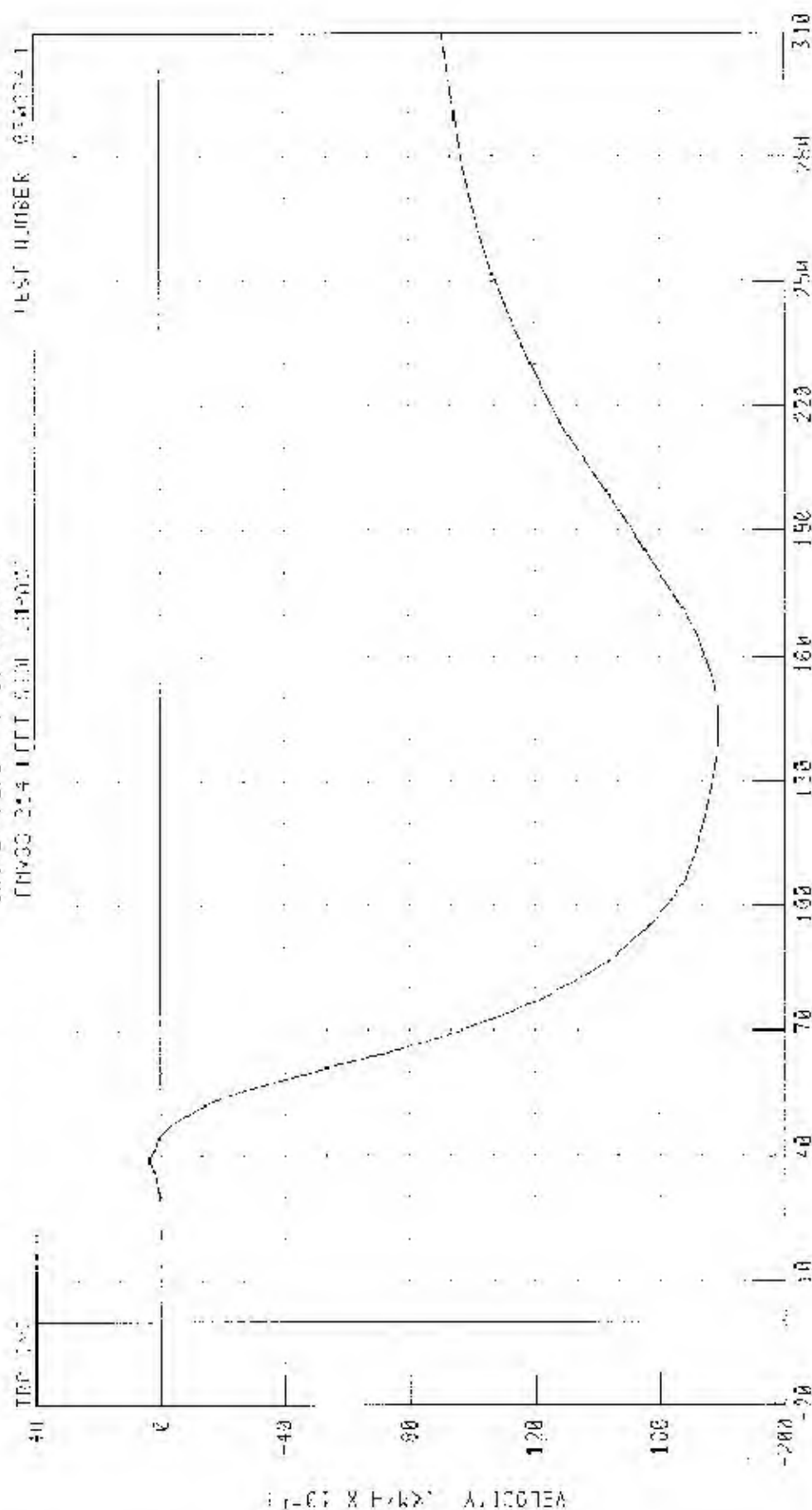
PEAK DATA 2.74 0.0 205.60 MS. -16.41 G @ 62.64 MS

55.10 KPH 90 DEGREE SIDE IMPACT (OFFSHORE CARRIER) INTO LEFT SIDE OF 2004 LEXUS ES350

DRIVER SIDE X AXIS VELOCITY

INVO 014 LEFT SIDE IMPACT

TEST NUMBER 030924-1



TIME (MS)

PEAK DATA: 9 36 KPH @ 75 12 MS, 17 00 KPH @ 142.43 MS

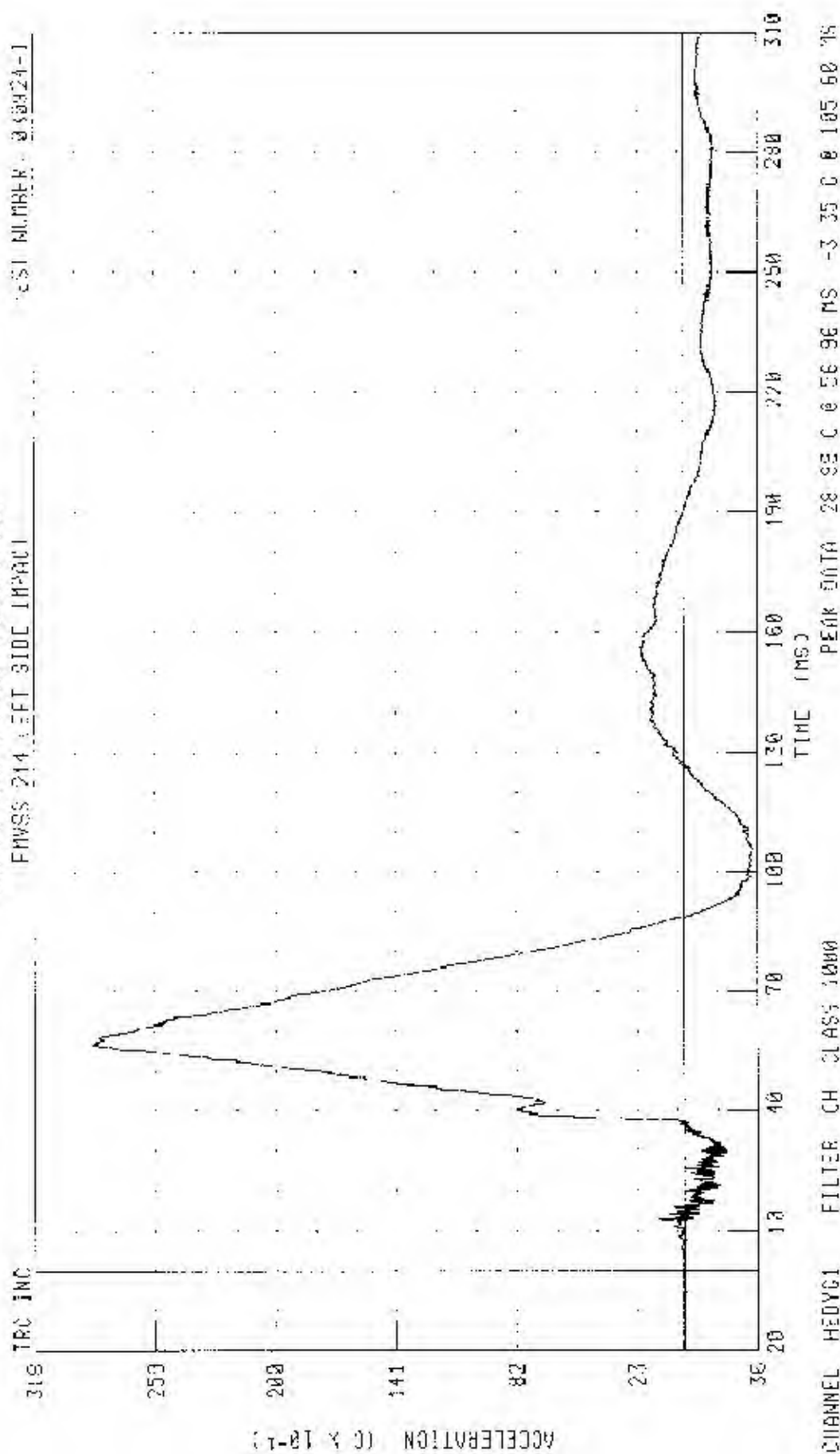
CHANNEL (EDXV) FILTER: CF CLASS 160

55-20 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD Y AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



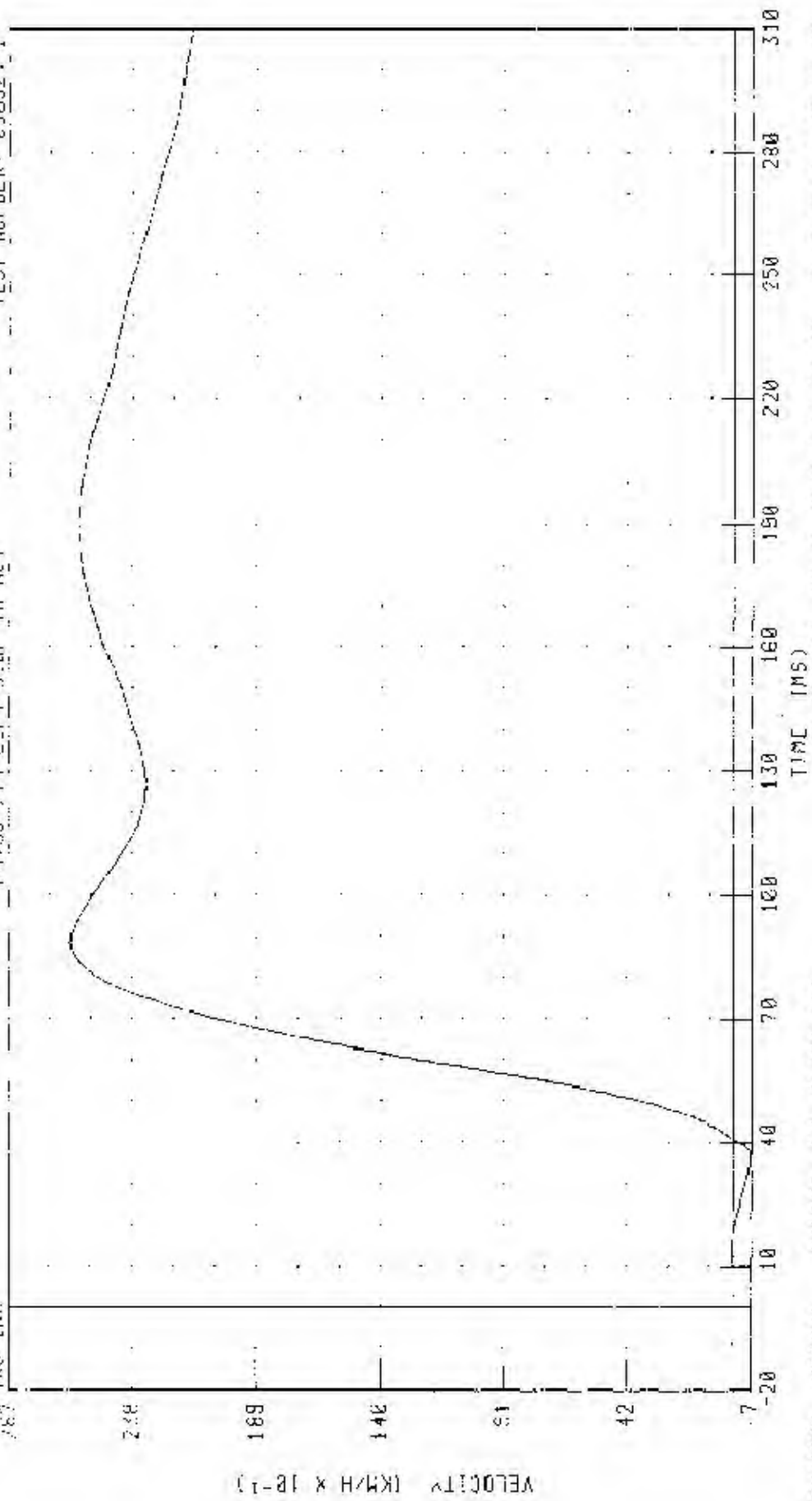
55/20 KPH 50 DEGREE STOP IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2001 LEXUS RX350

DRIVER IMPACT Y-AXIS VELOCITY

PHASE 214 LEFT STOP IMPACT

TRC INC

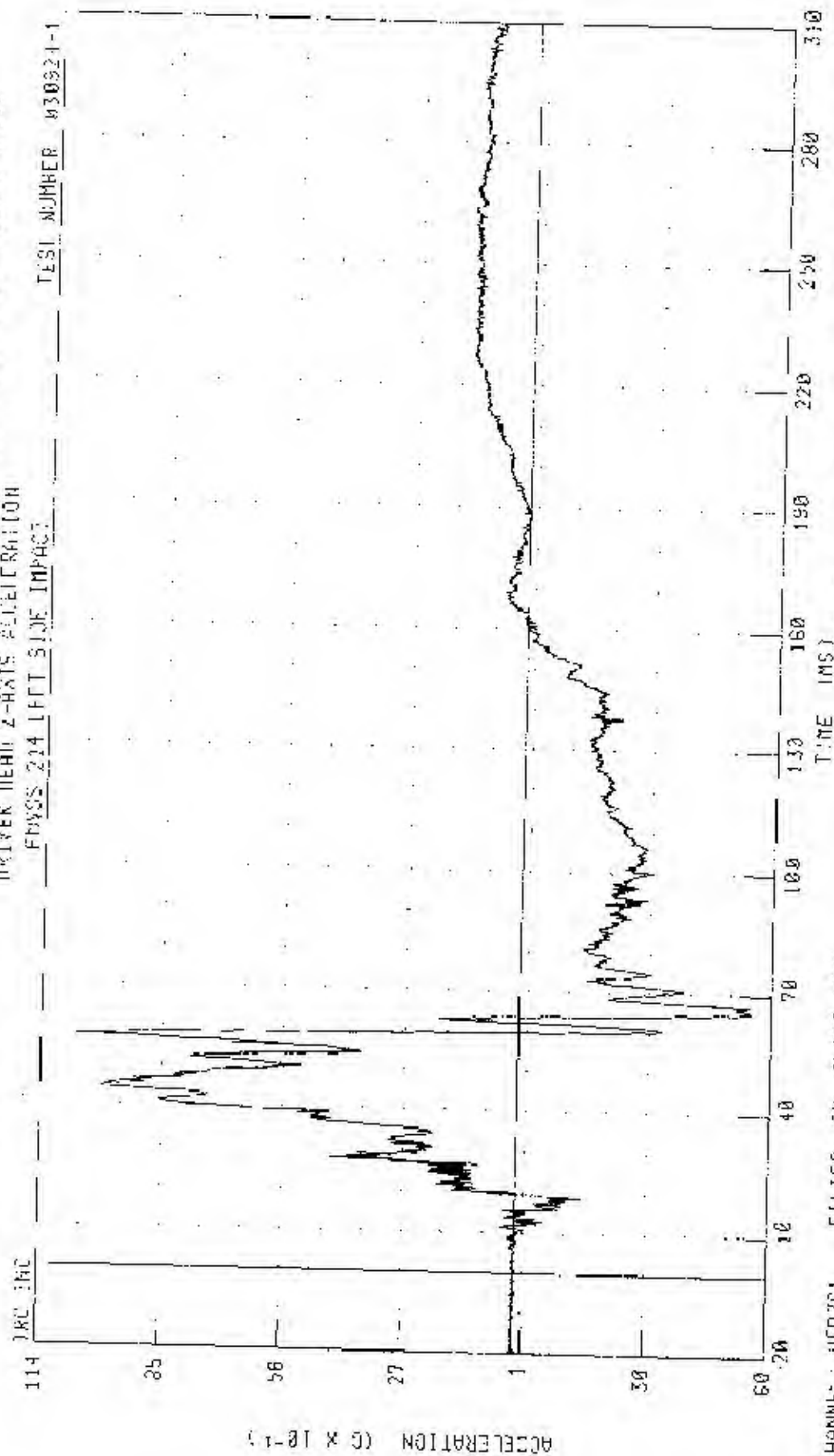
TEST NUMBER: 030924



PEAK DATA: 26 24 KM/H @ 88 72 MS, 0.67 KPH @ 37 12 MS

CHANNEL: HEDYV1 FILTER: CH CLASS 180

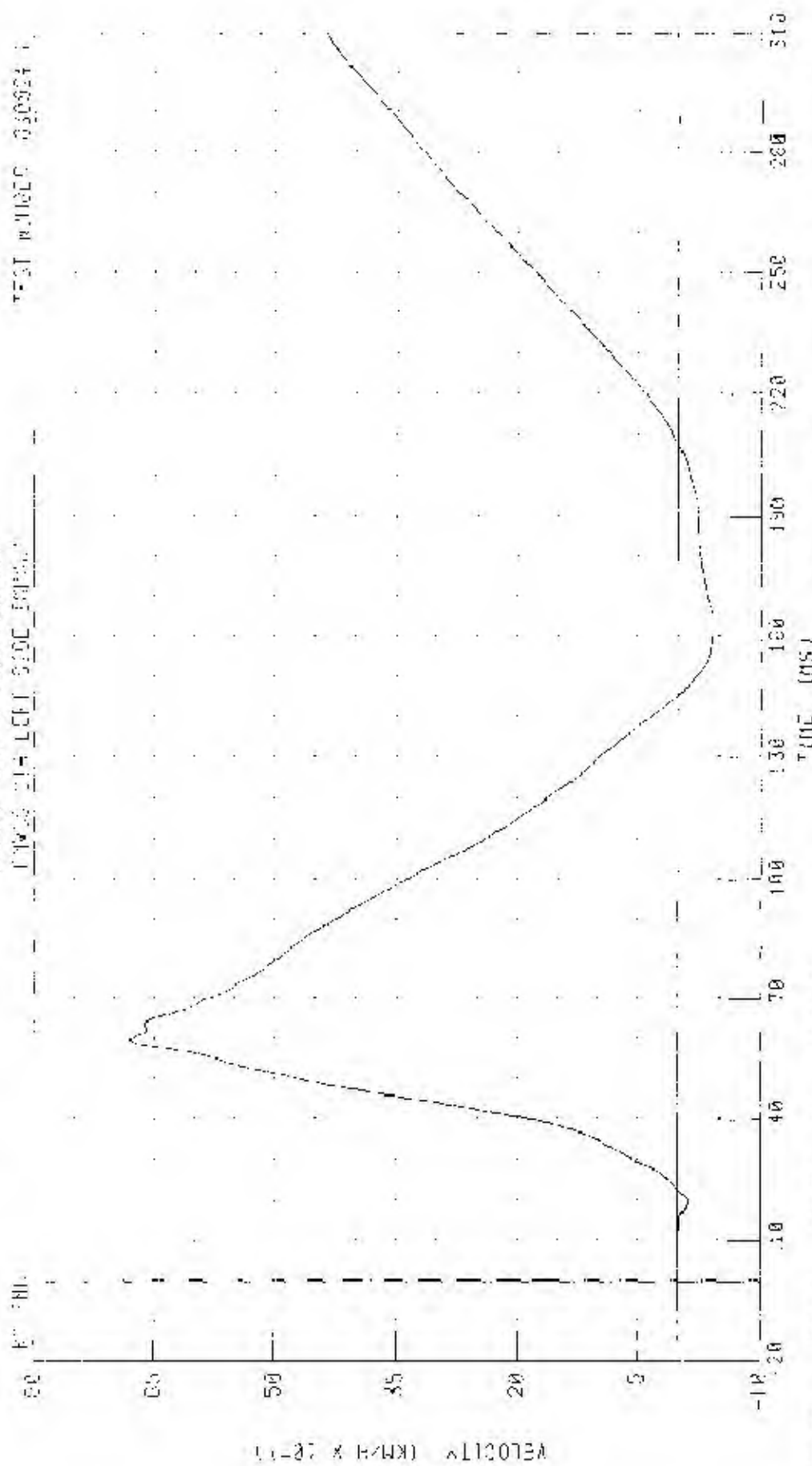
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330
 DRIVER HEAD Z-AXIS ACCELERATION
 FVWS 214 LEFT SIDE IMPACT



CHANNEL HED201 FILTER CH. CLASS 1000

PEAK DATA 10 57 00 57 44 MS, -5 53 G @ 65 68 MS

REF ID: A66064



CHINESE JOURNAL OF
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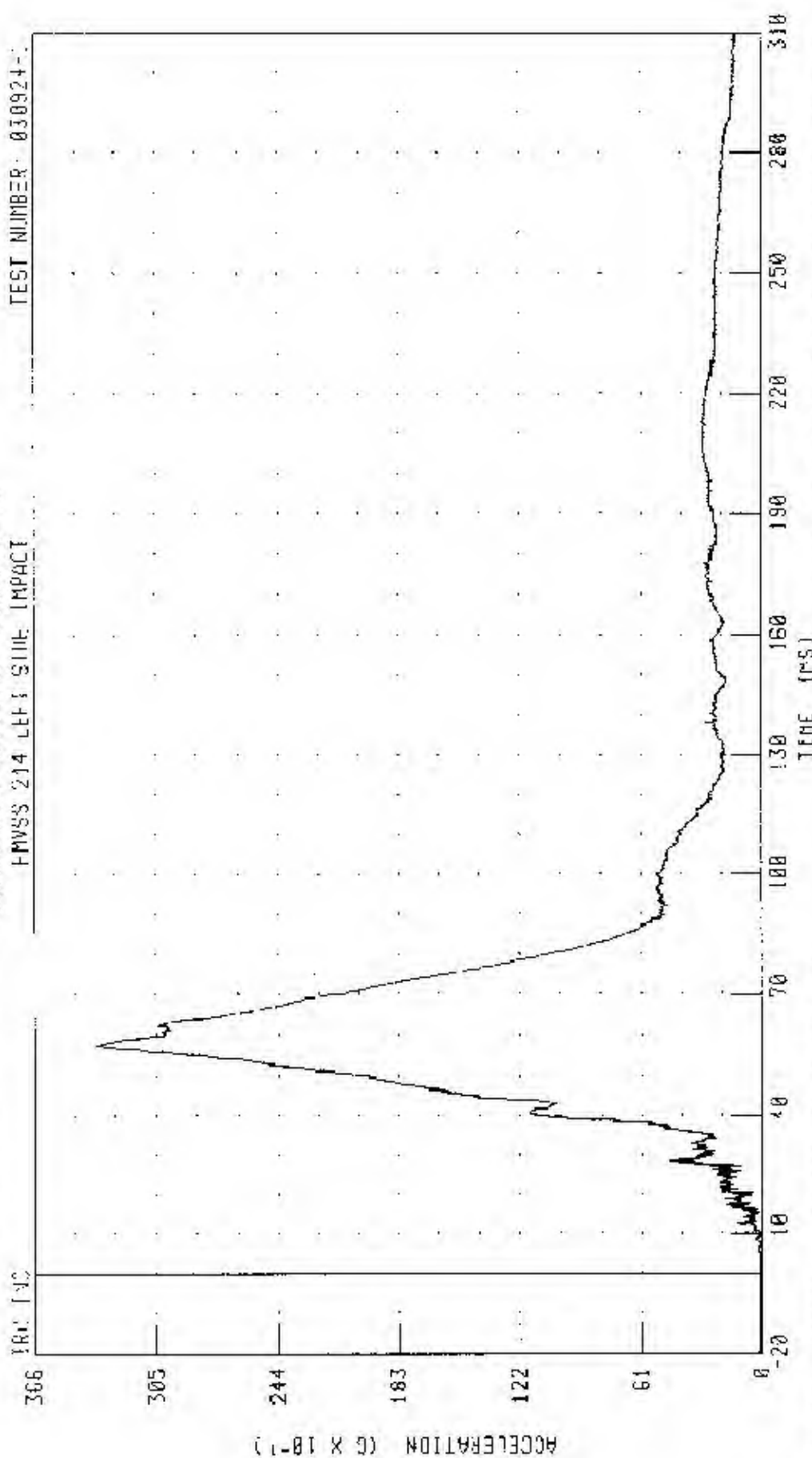
1948 10 1 3: 00 PM 3 99.16 MB. 3 43 27.4 3.121 39 119

55/20 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

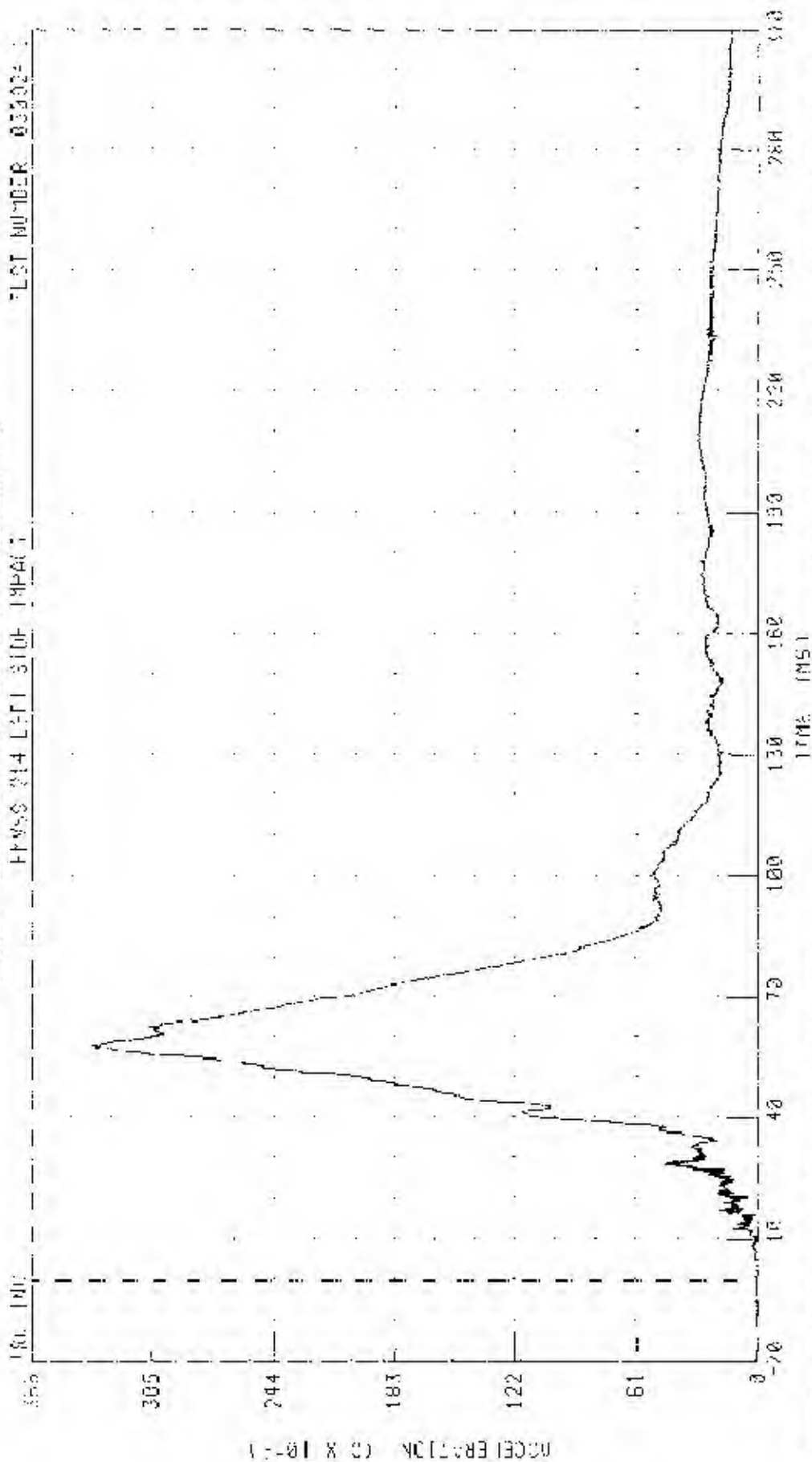
TEST NUMBER: 030924-1



CHANNEL HEAD01 FILTER CH CLASS 1000

PEAK DATA 33.50 0 0 57.44 MS; 0 01 0 0 -17.36 MS

05 20 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2002 FORD FUSION RX350)
 DRIVER HEAD SUBCUTANT REDUCED AT ACCELERATION



CHANNEL HEADRL FILTER ON GLOSS 1800

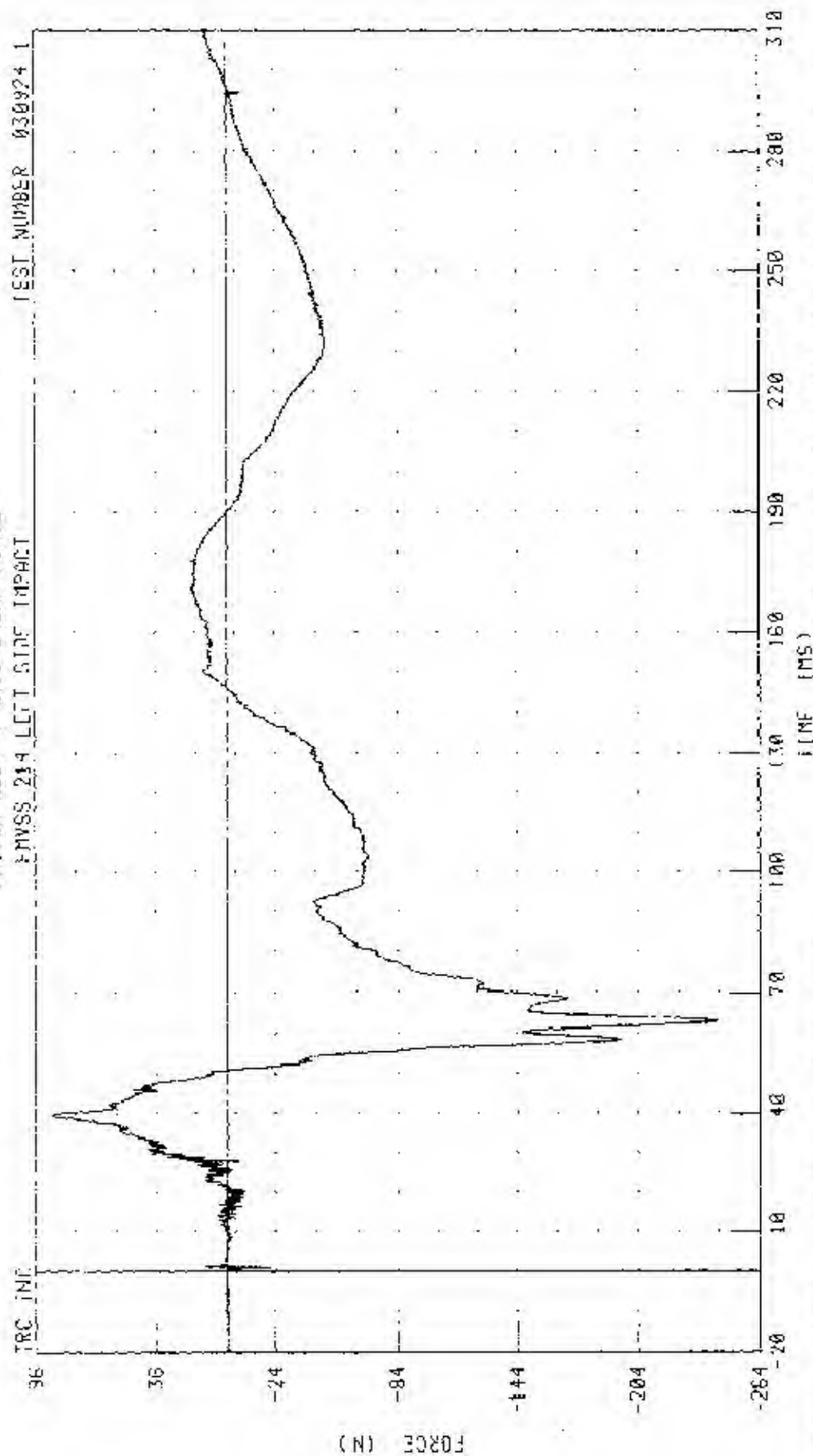
PL02 DATA: J3 01 0 0 57 44 MS, 0 01 0 0 -10 00 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK X AXIS SHEAR FORCE

PMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



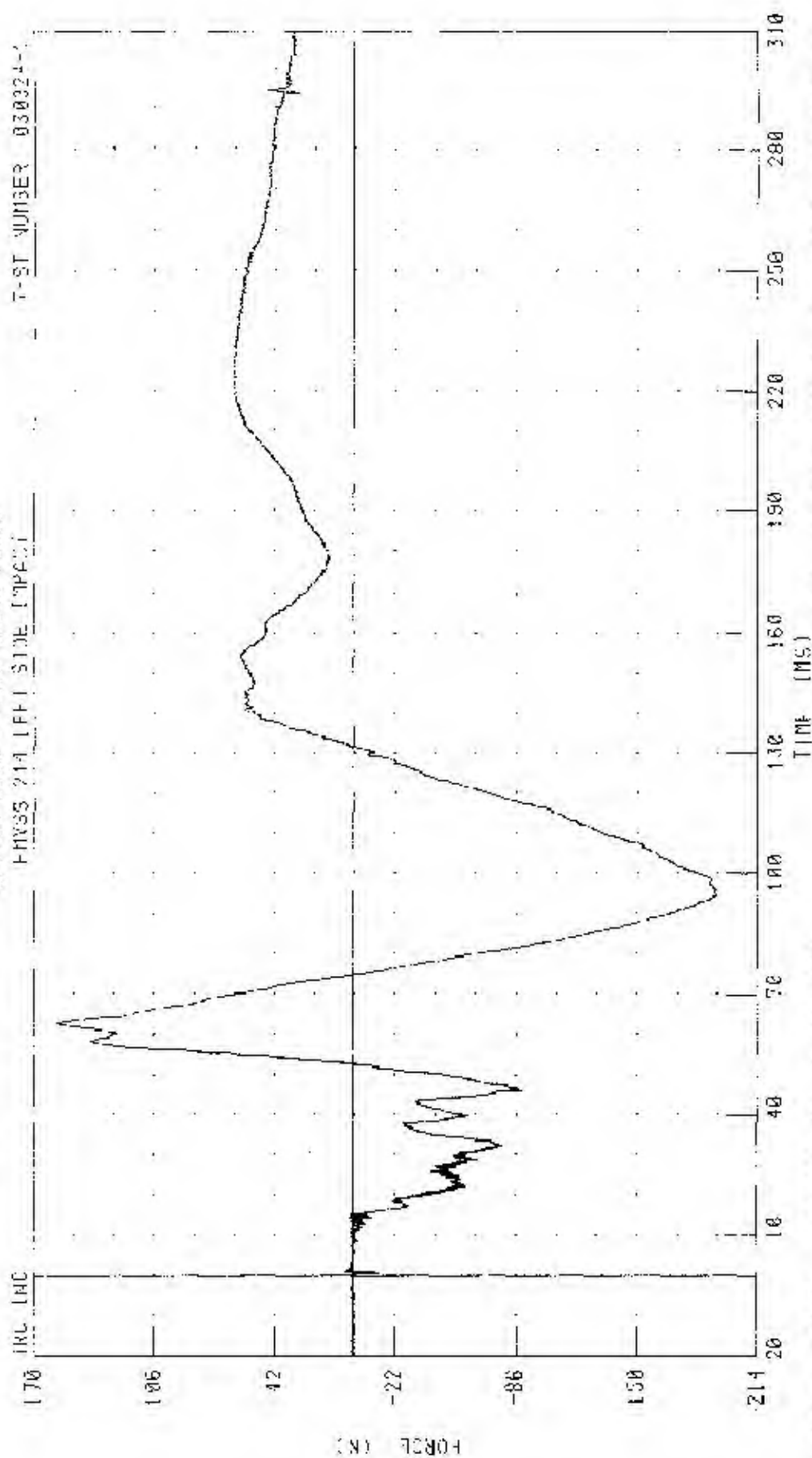
CHANNEL: NECKXF1 FILTER: CH: CLOSS 1000

WEAR DATA 87.32 N @ 30.68 MS, -243.16 N @ 65.28 MS

55-216 KPH 30 DEGREE STOP IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SLIDE OF 2004 LEXUS RX330

DRIVER RECK Y-AXIS SPOKE FORCE

PHYS 214 LEFT SIDE IMPACT T-ST NUMBER 030321



LIANNEI NEKYF1 FILTER CH, CLASS 1000

PEAK DATA 127.79 N @ 62.64 MS, -192.54 N @ 24.77 MS

05/78 K24 30 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2024 LEXUS RX330
 DRIVER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1

104 1PC INC.

85

66

47

28

9

-10

FORCE (N X 10³)

CHANNEL NEKZF1

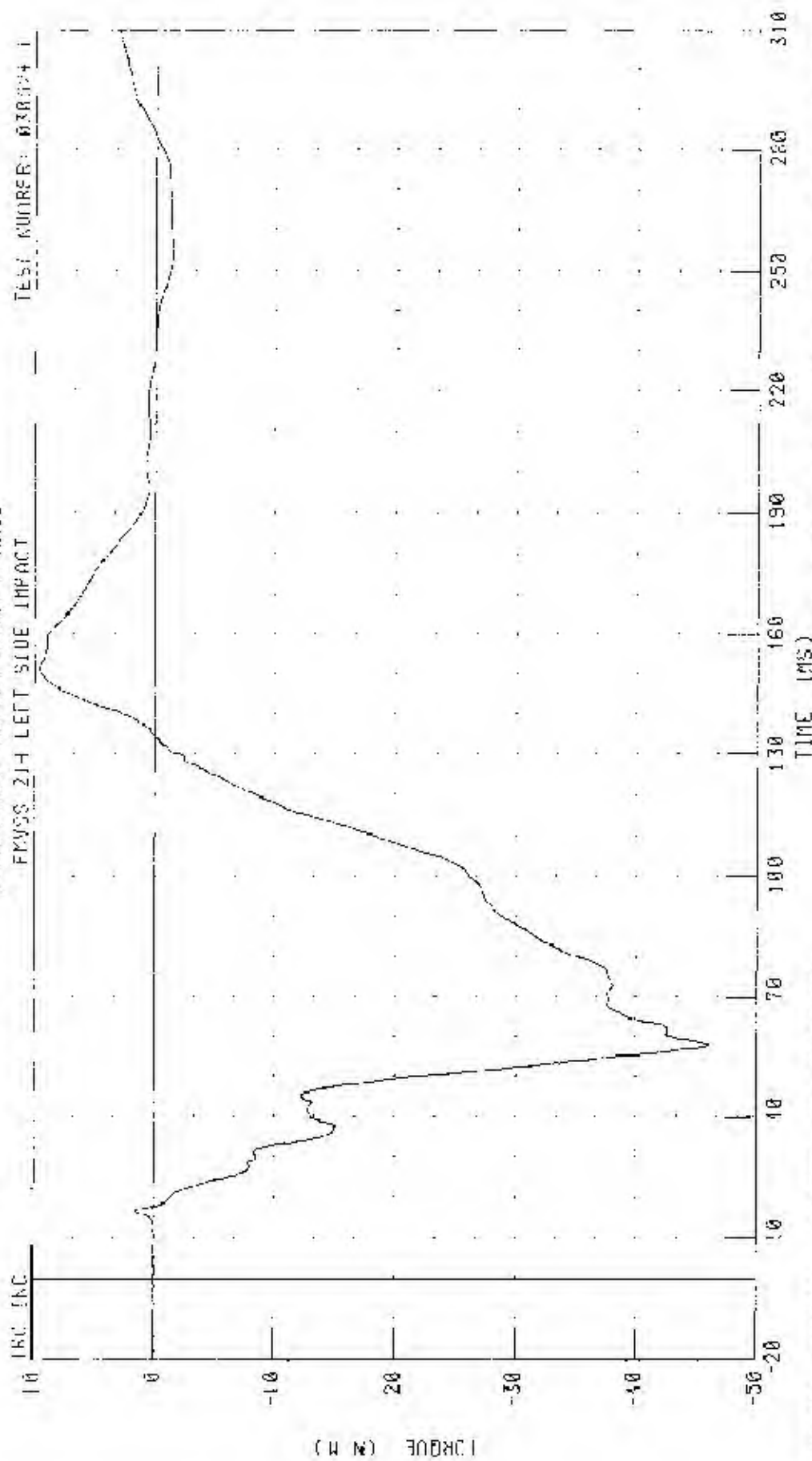
FILTER CH CLASS 1800

TIME (MS)

PEAK DATA 973 46 N 8 57 20 MS; -91 71 N 8 115 36 MS

50-78 KPH 90 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER INTO P-I SUB OF 2004 LEXUS RX350

DRIVER NECK MOMENT ABOUT X AXIS



CHANNEL: NFKX.M1 FILTER: CH CLASS 600

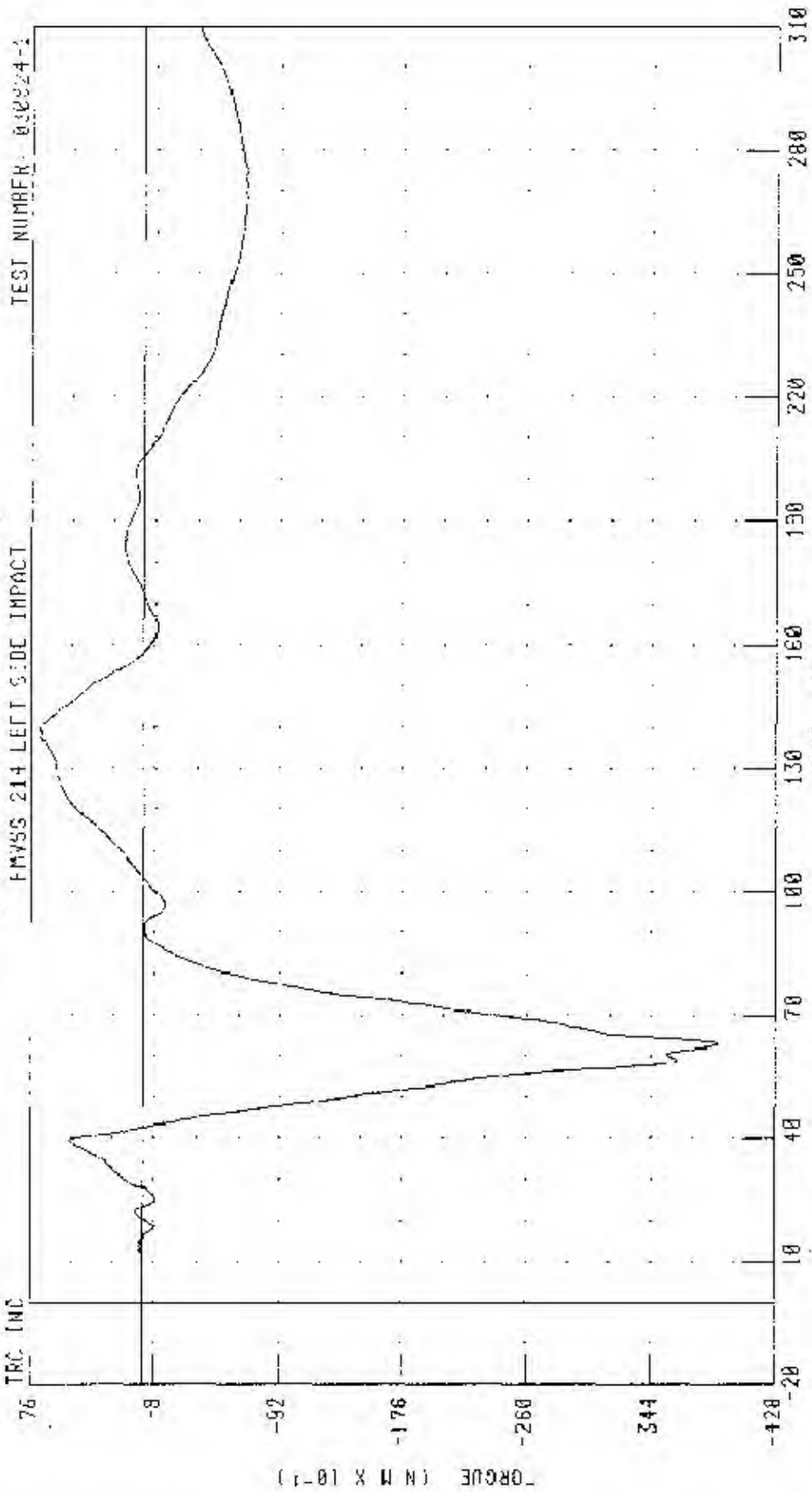
55.20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INT) LEFT SIDE OF 2004 LEXUS RX300

DRIVER NECK MOMENT ABOUT Y AXIS

TEST NUMBER: 030924-1

FMVSS 214 LEFT SIDE IMPACT

TRC (MC



TIME (MS)

CHANNEL: NEKYM1 FILTER: CH CLASS: 600

PEAK DATA: 6.92 V M @ 139.60 MS, -39.00 N M @ 63.12 MS

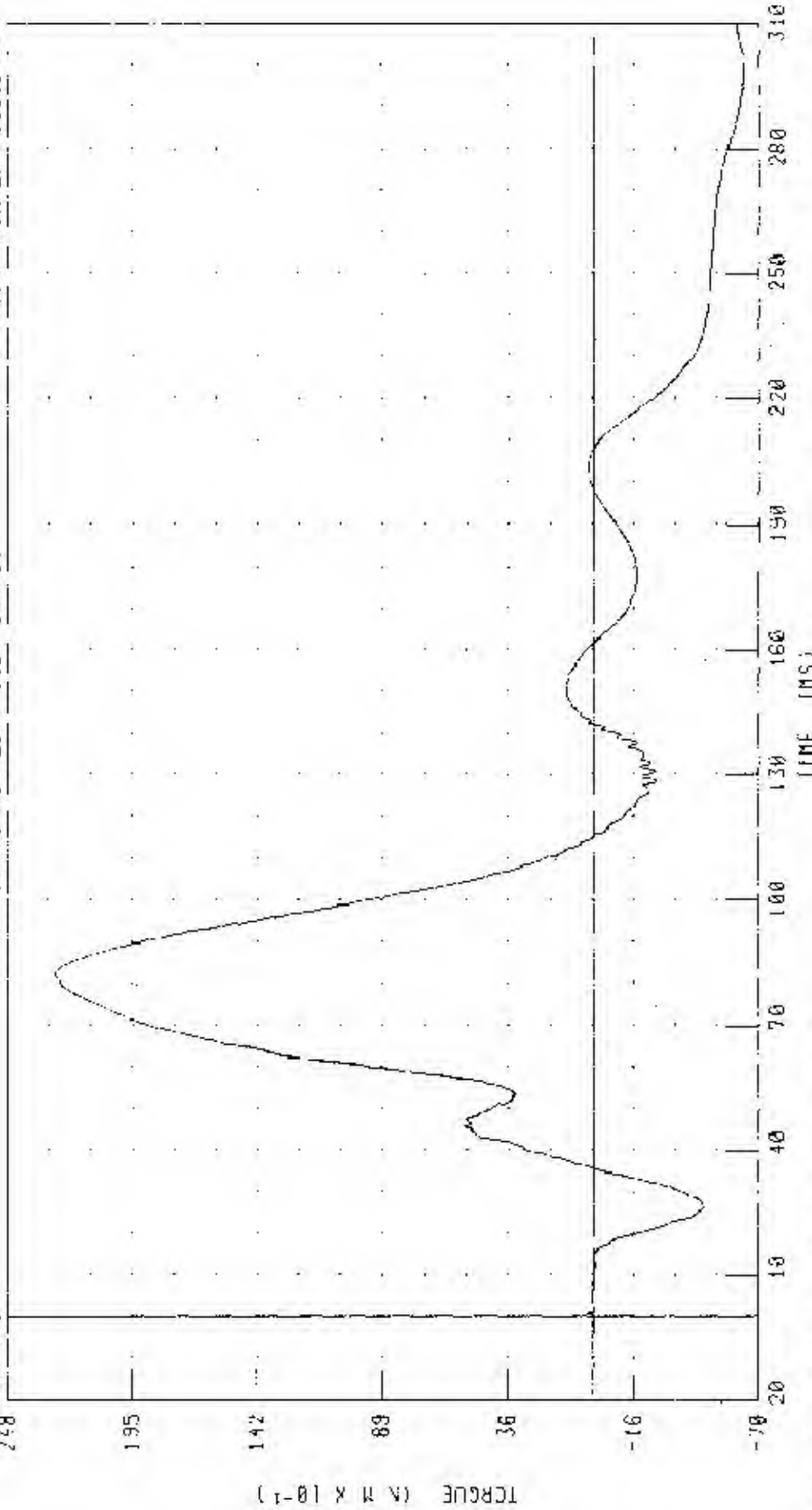
55728 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: K30024-1

TRC INC



CHANNEL: NEK2M1 FILTER: 2-H, CLASS 600

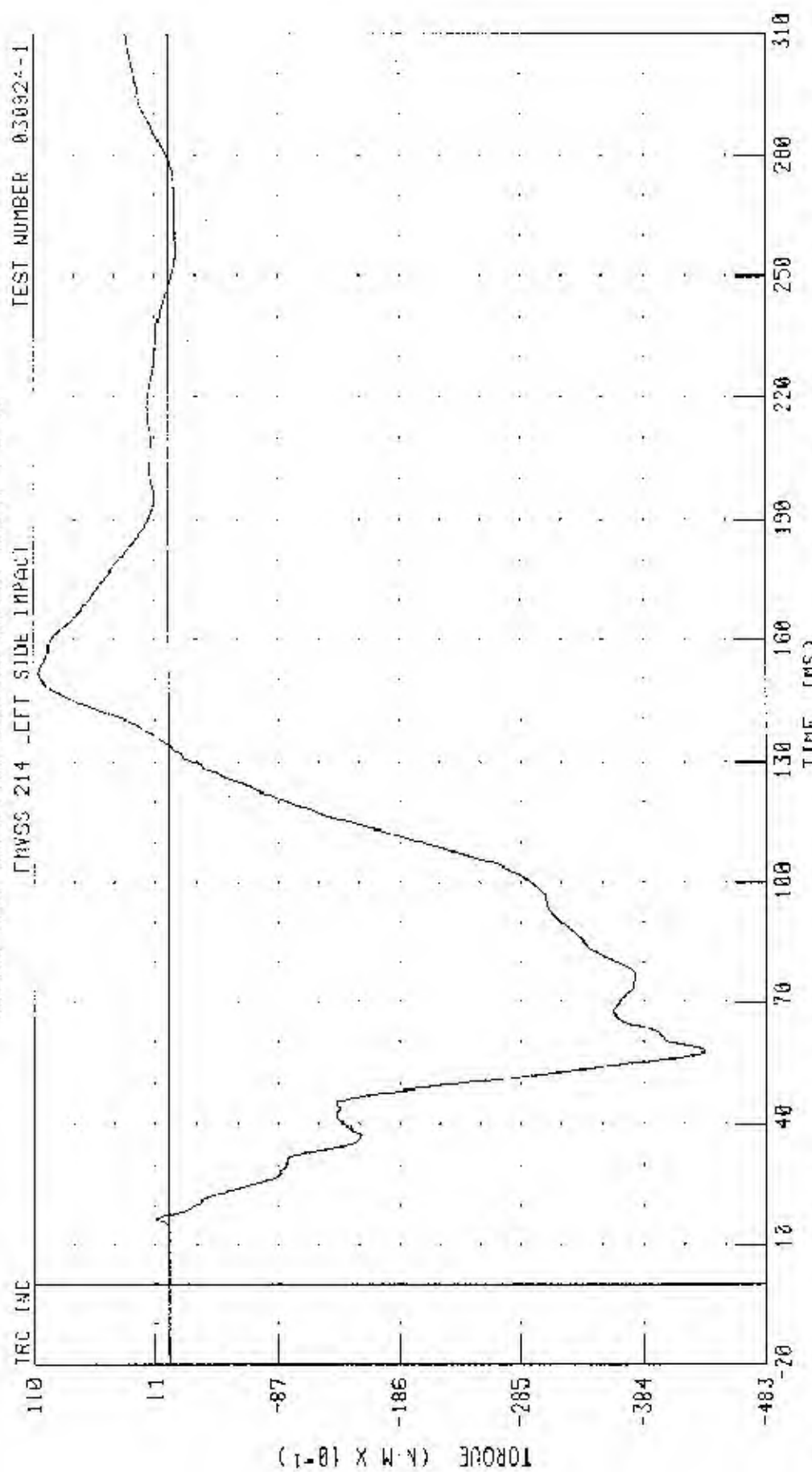
PEAK DATA: 23.71 N M @ 82.74 MS, -6.38 N M @ 287.78 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

TEST NUMBER 030924-1

CHASS 214 LEFT SIDE IMPACT



TIME (MS)

CHANNEL: NK0001 FILTER: CF, CLASS: 600

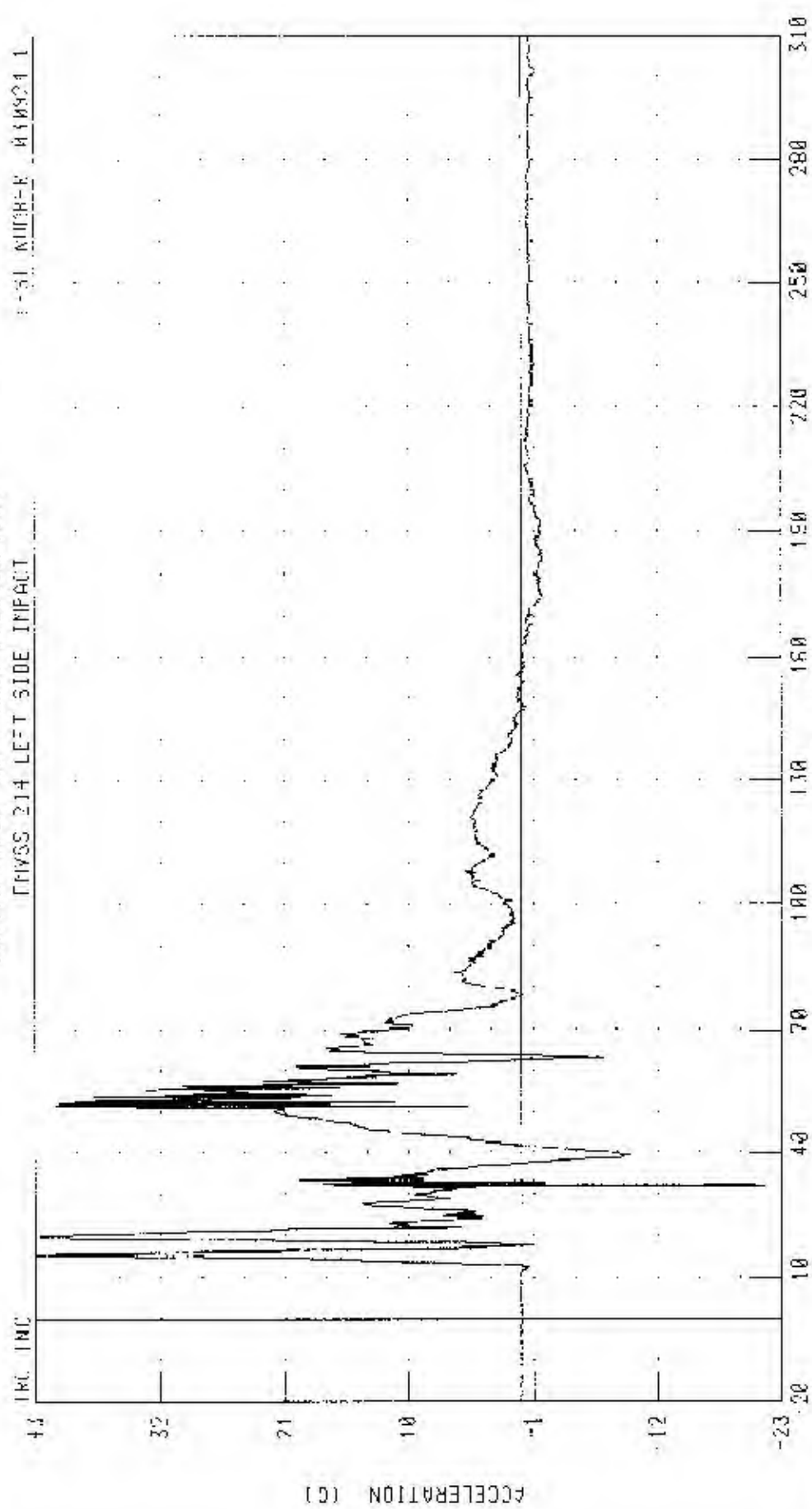
PEAK DATA: 10 59 N M @ 151 68 MS: -43 51 N M @ 57 84 MS

55/23 KP4 90 LEFT SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 20K4 TRXHS AX55A

DRIVER UPPER 210 Y AXIS ACCELERATION

TEST NUMBER 030924-1

TRVSS 214 LEFT SIDE IMPACT



TIME (MS)

CHANNEL LRGY61 FILTER CH. CLASS 1000

PEAK DATA 42 88 0.9 15.52 MS -21 42 0.9 32.08 MS

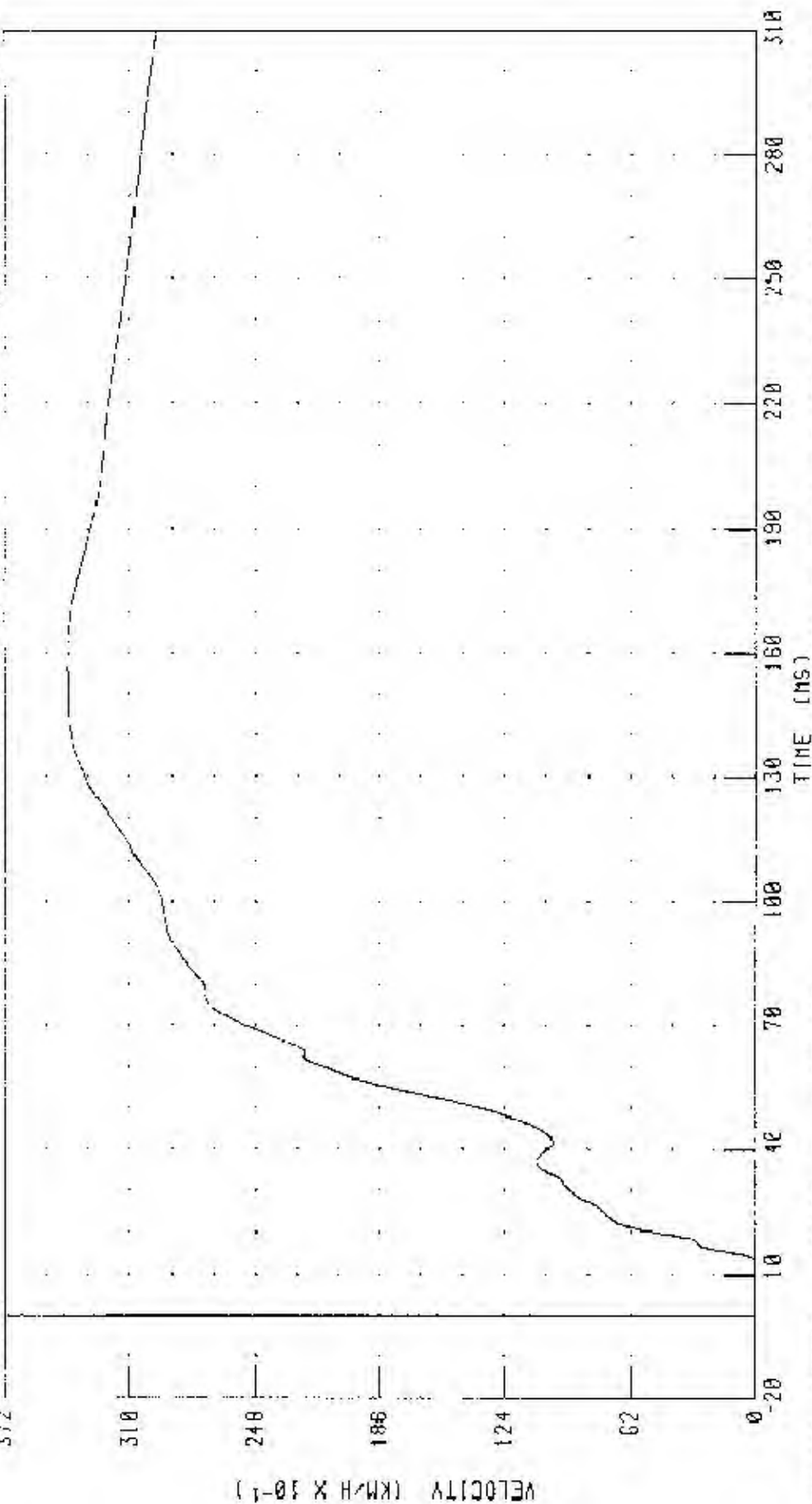
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER UPPER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1

TRC INC.



TIME (MS)

CHANNEL LURVVI FILTER CH CLASS 100

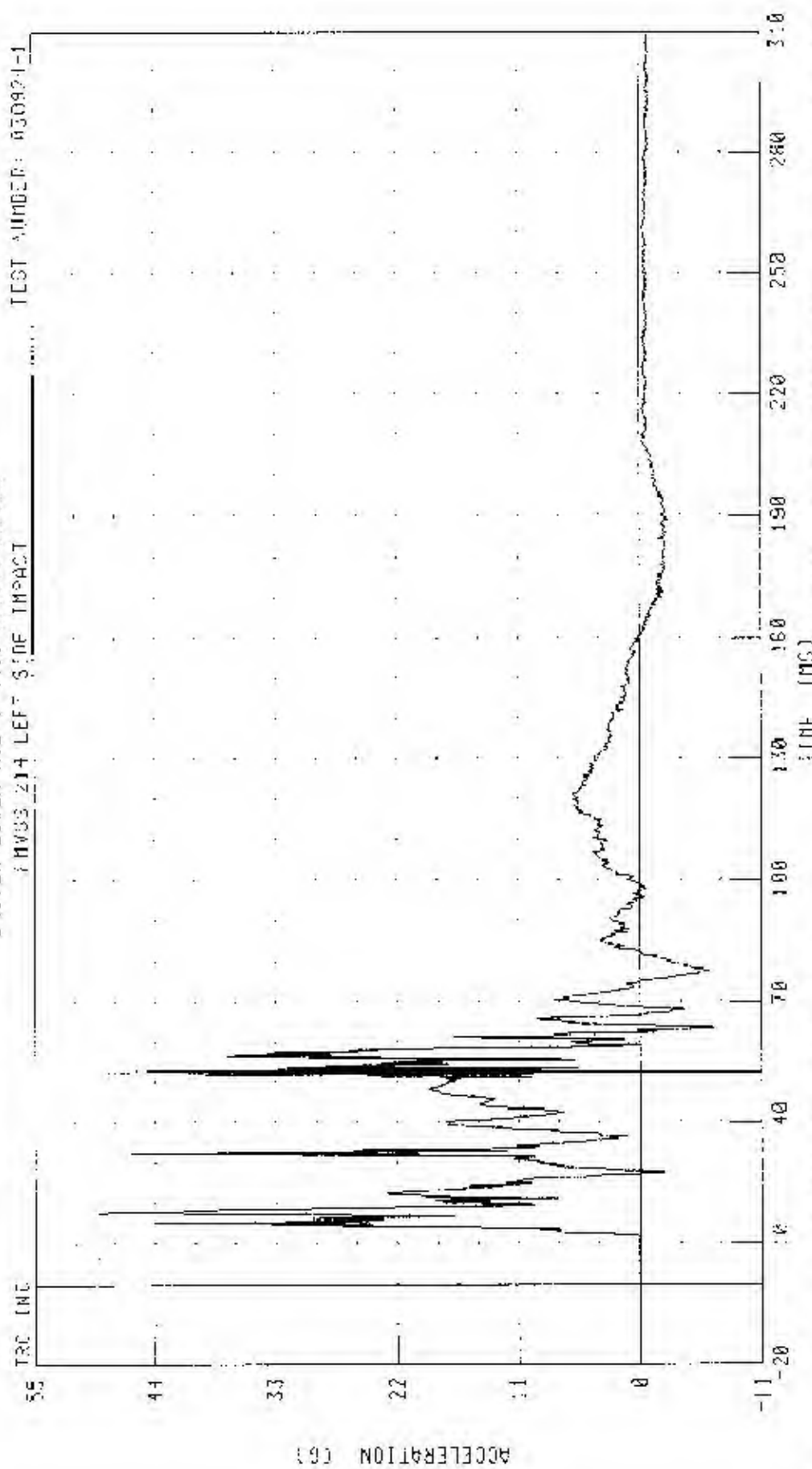
PEAK DATA: 34 09 KM/H @ 156 48 MS, 0 00 KM/H @ 0.00 MS

55/20 MPH SW INCHER SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX300

DRIVER LOWER RIB Y-AXIS ACCELERATION

TEST NUMBER: 030924-1

INCHER 214 LEFT SIDE IMPACT

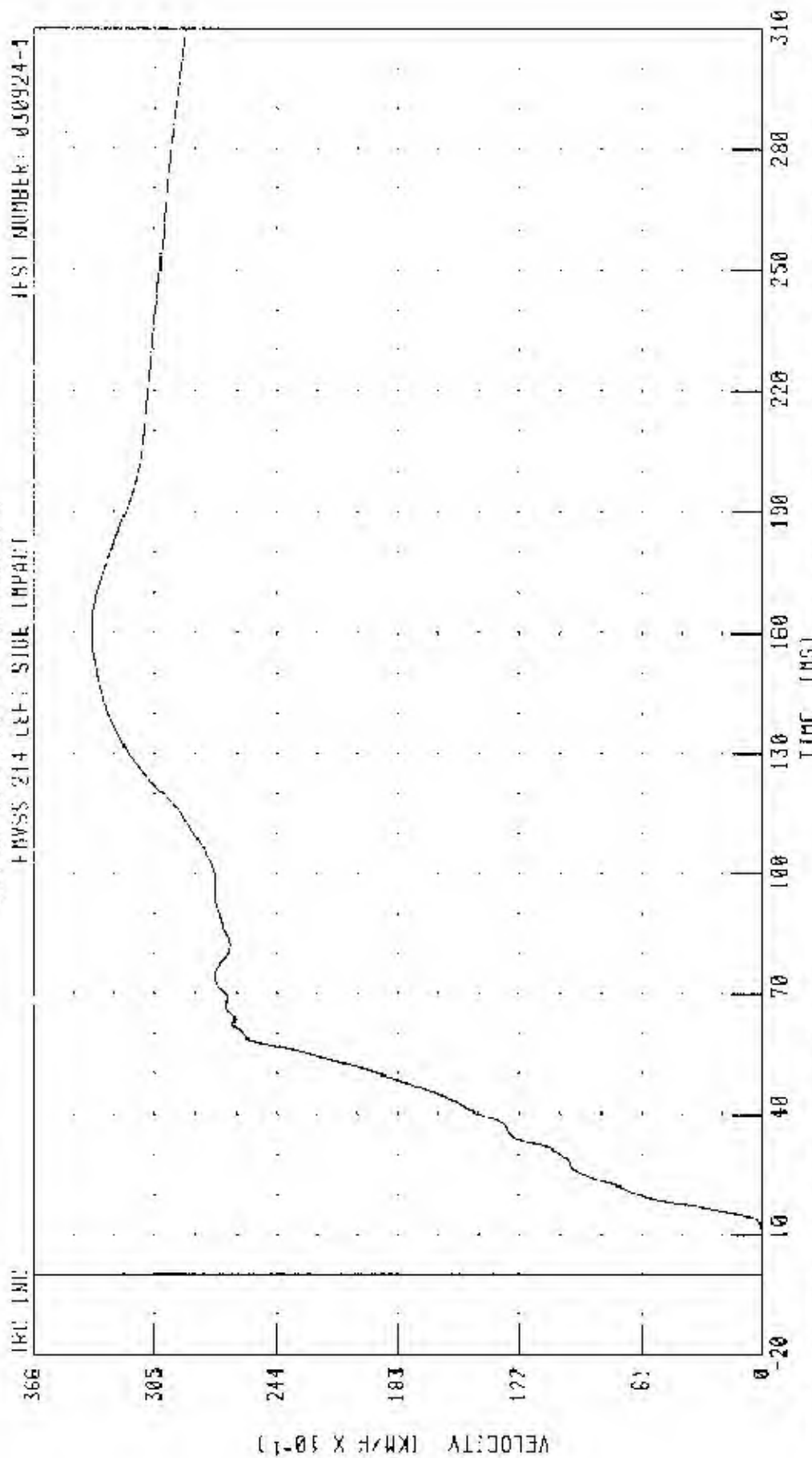


55/28 KPH 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER RIB Y-AXIS VELOCITY

MASS 214 LEFT SIDE IMPACT

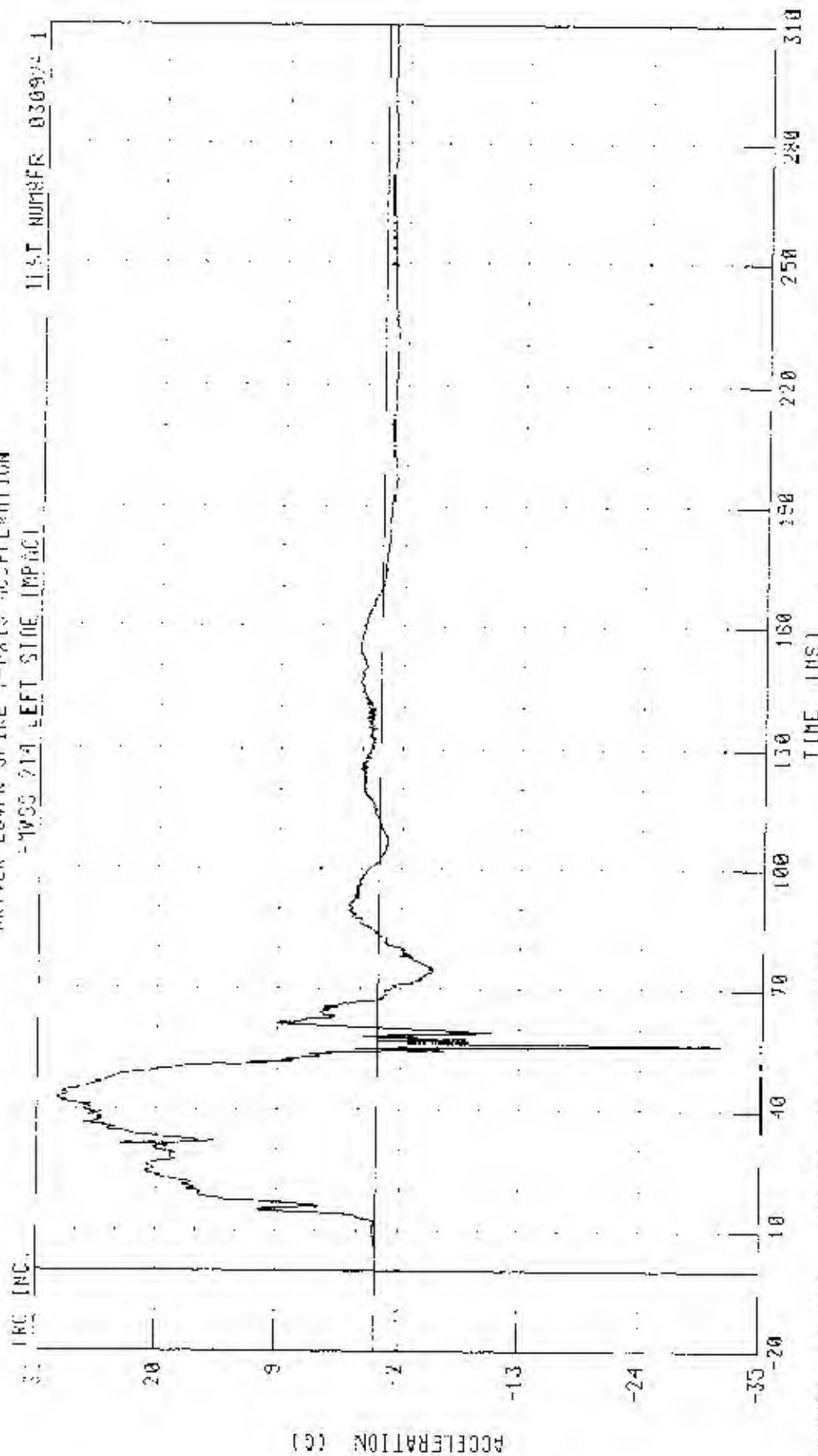
TEST NUMBER: 030924-1



CHANNEL: LLRYV1 FILTER: CH CLASS 180

PEAK DATA: 33.69 KPH @ 160.00 MS; 0.00 KPH @ 0.00 MS

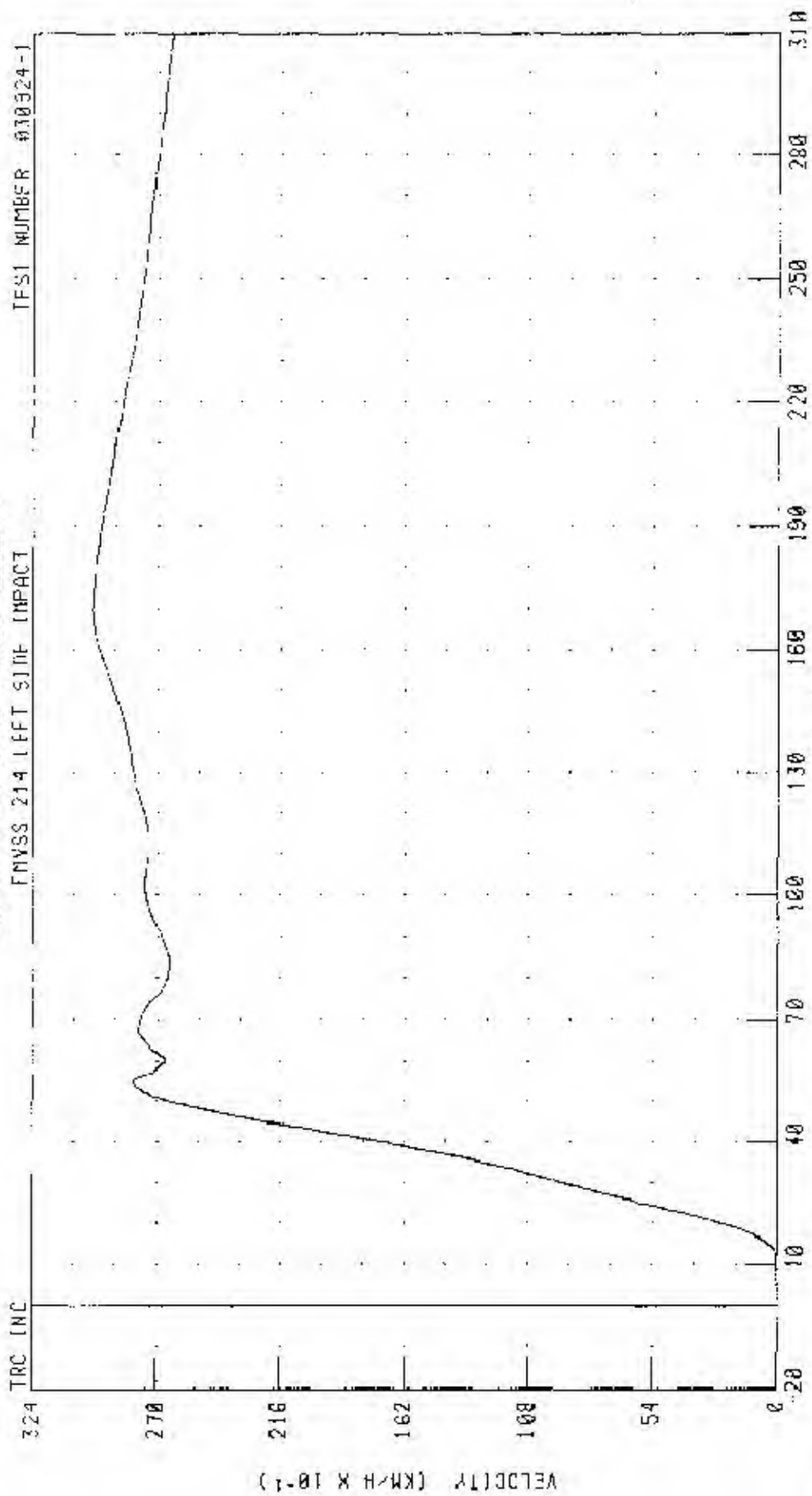
55/25 MPH 90 DEGREE SIDG IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330
 DRIVER LOWER SPIKE Y-AXIS ACCELERATION



CHANNEL :12Y01 FILTER CH: C1 CSS 1200
 PEAK DATA 79 00 0 @ 43 28 MS, -31.37 0 0 56 32 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER SPINE Y-AXIS VELOCITY



CHANNEL: T12YV1 FILTER: CH CLASS 180

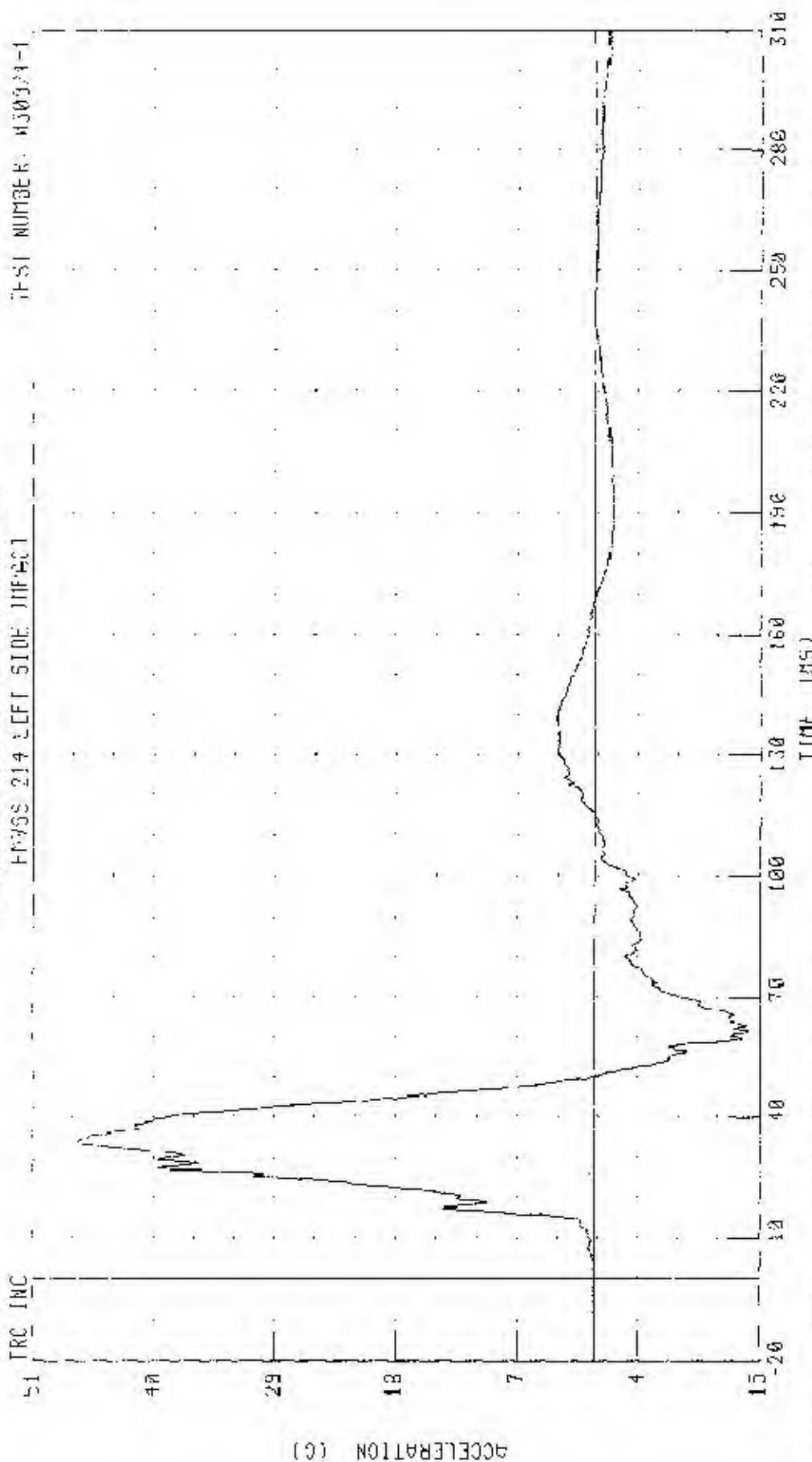
PEAK DATA: 29 78 KM/H @ 165 60 MS, 0 00 KM/H @ 0 00 MS

55/28 MPH 0% DEGRD SIDE IMPACT MOVING DEFORMABLE BARREL INTO LEFT SIDE OF 2004 LEXUS RX350

DRIVER PELVIS Y-AXIS ACCELERATION

FRYSS 214 LEFT SIDE IMPACT

TEST NUMBER: H30924-1



TIME (MS)

CHANNEL PEVY01 FILTER CH CLASS 1000

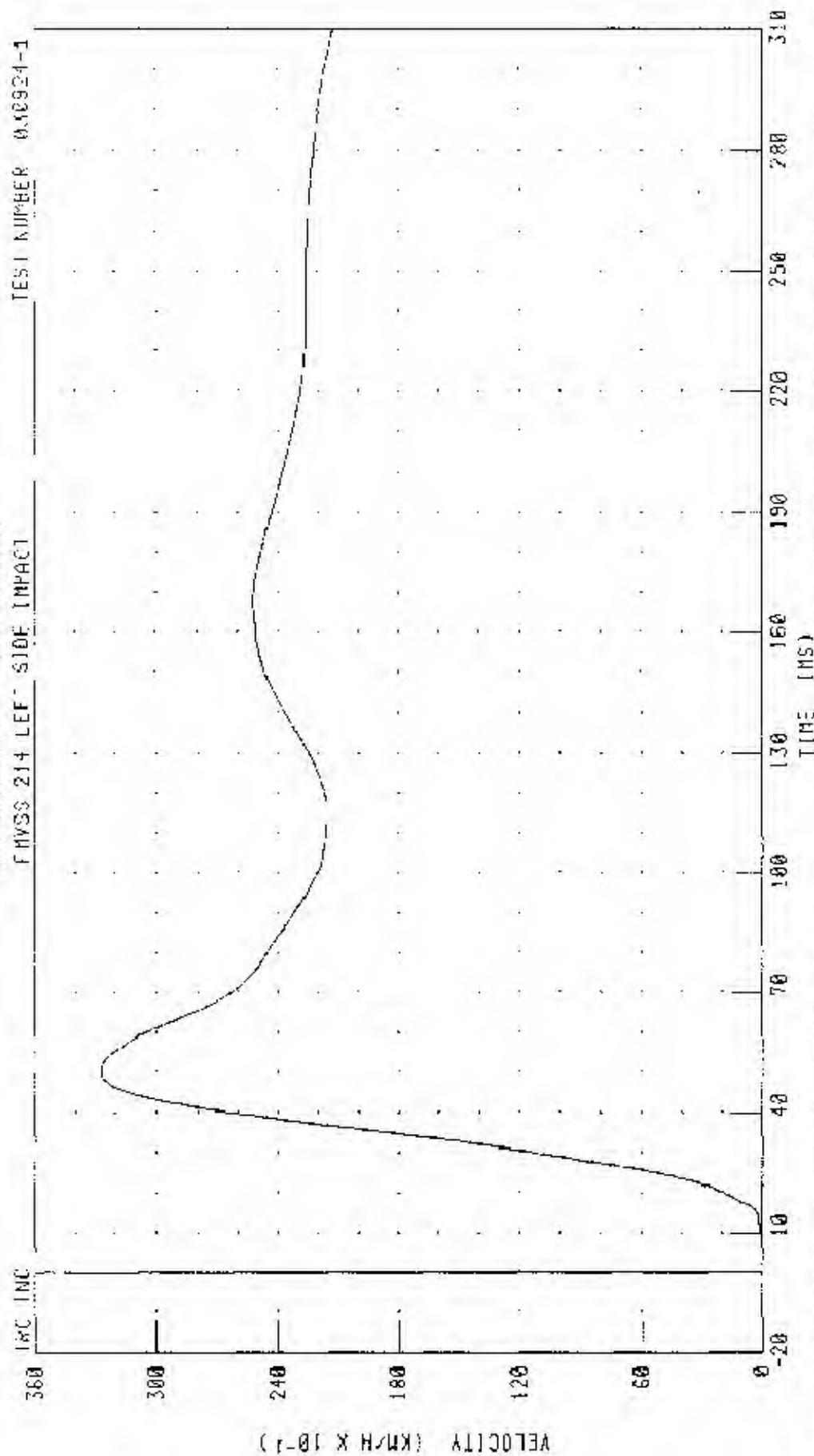
PLAK DATA: 46.75 C 0 34 36 MS, -14 12 0 61 84 75

55.28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PELVIS Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



TIME (MS)

CHANNEL PEVYV1 FILTER CH CLASS 180

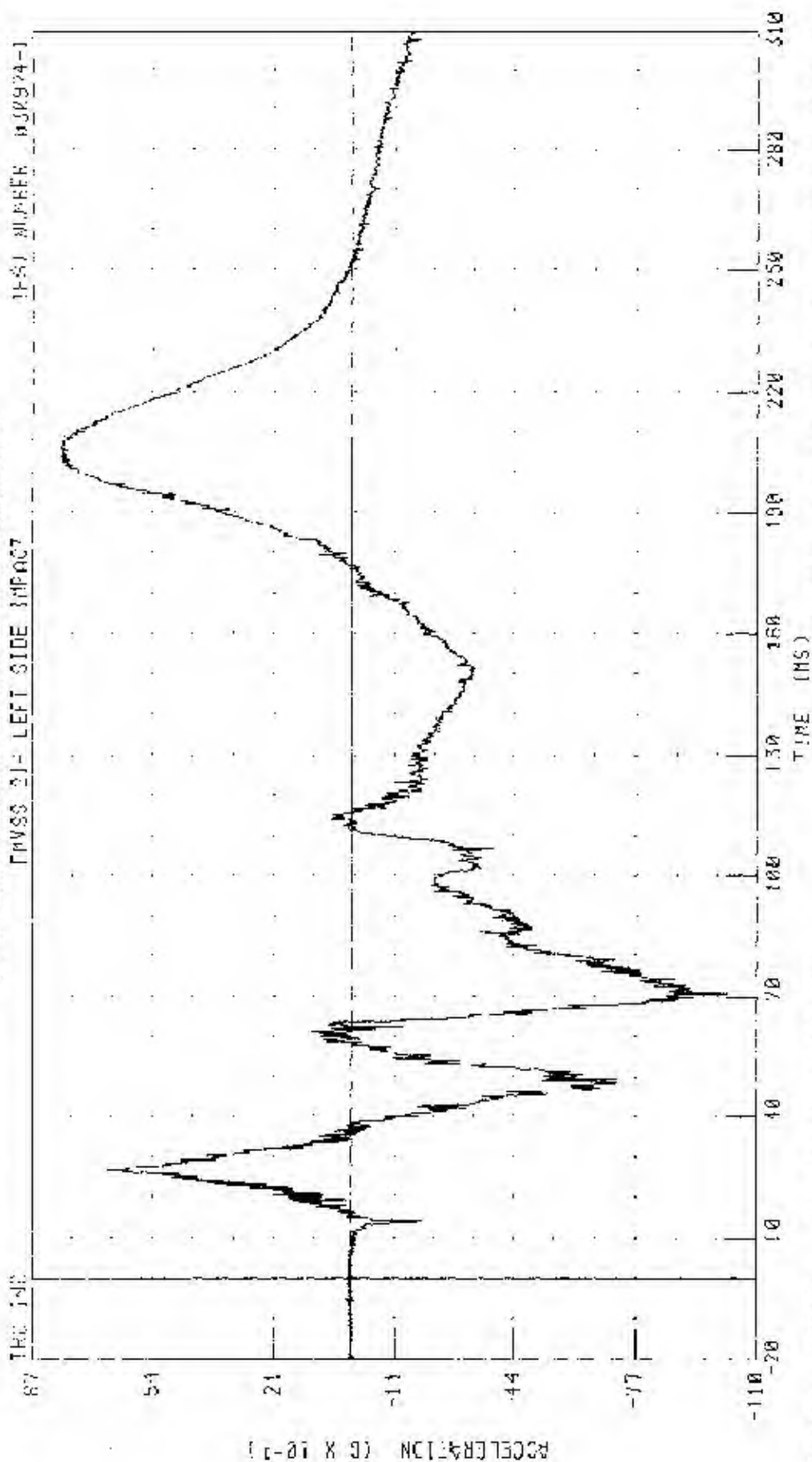
PEAK DATA 32.73 KM/H @ 50.74 MS, 0.20 KM/H @ 0.00 MS

55.28 MPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARREL) INTO (LT) SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



CHANNEL HED04 FILTER CH CLASS 1000

PEAK DATA 795 G @ 203.92 MS, -10.28 G @ 70.80 MS

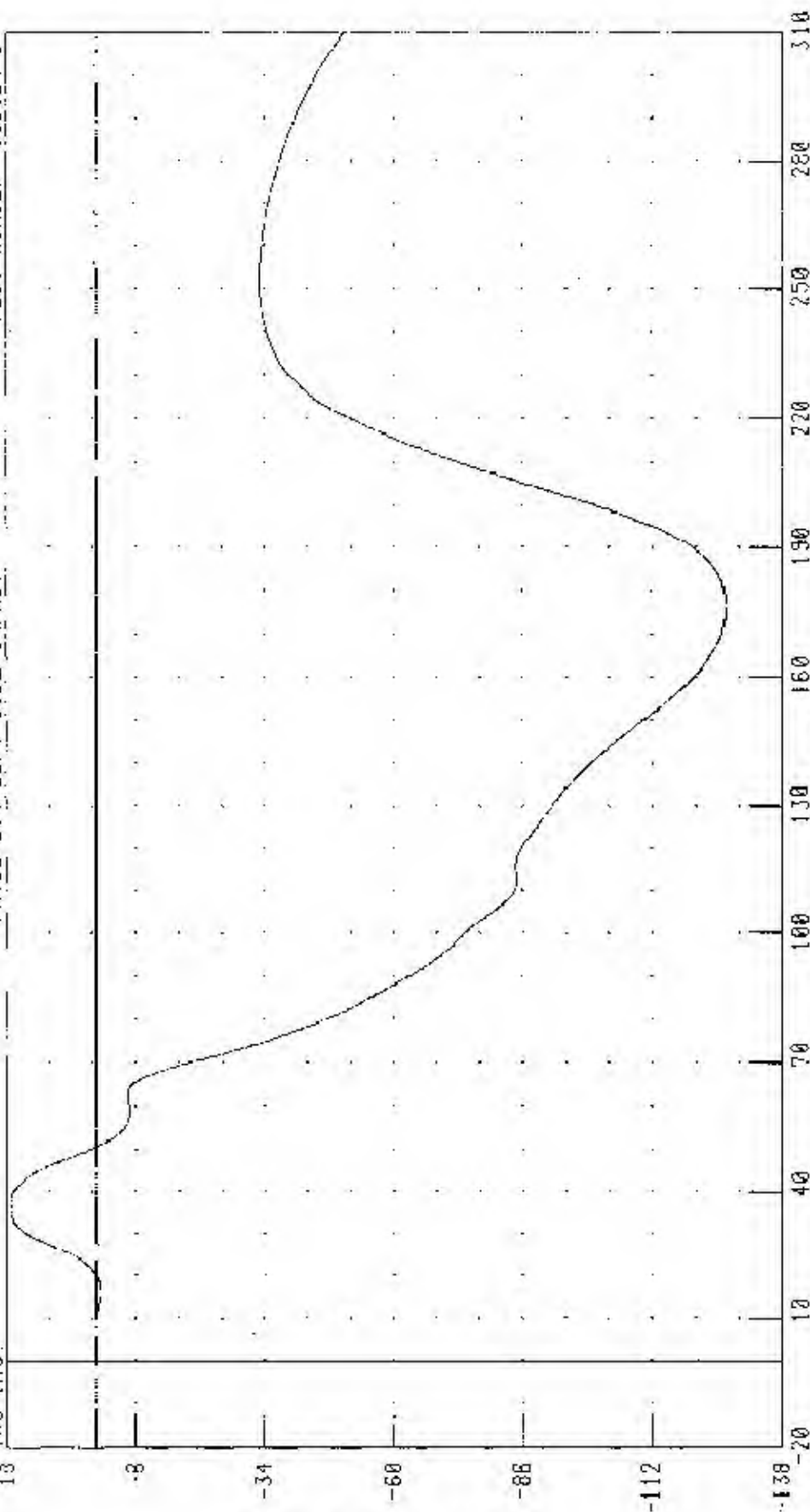
55278 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD X-AXIS VELOCITY

TRC (M)

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924 1



TIME (MS)

PEAK DATA 1 75 KM/H @ 36.56 MS; -17.67 KM/H @ 176.72 MS

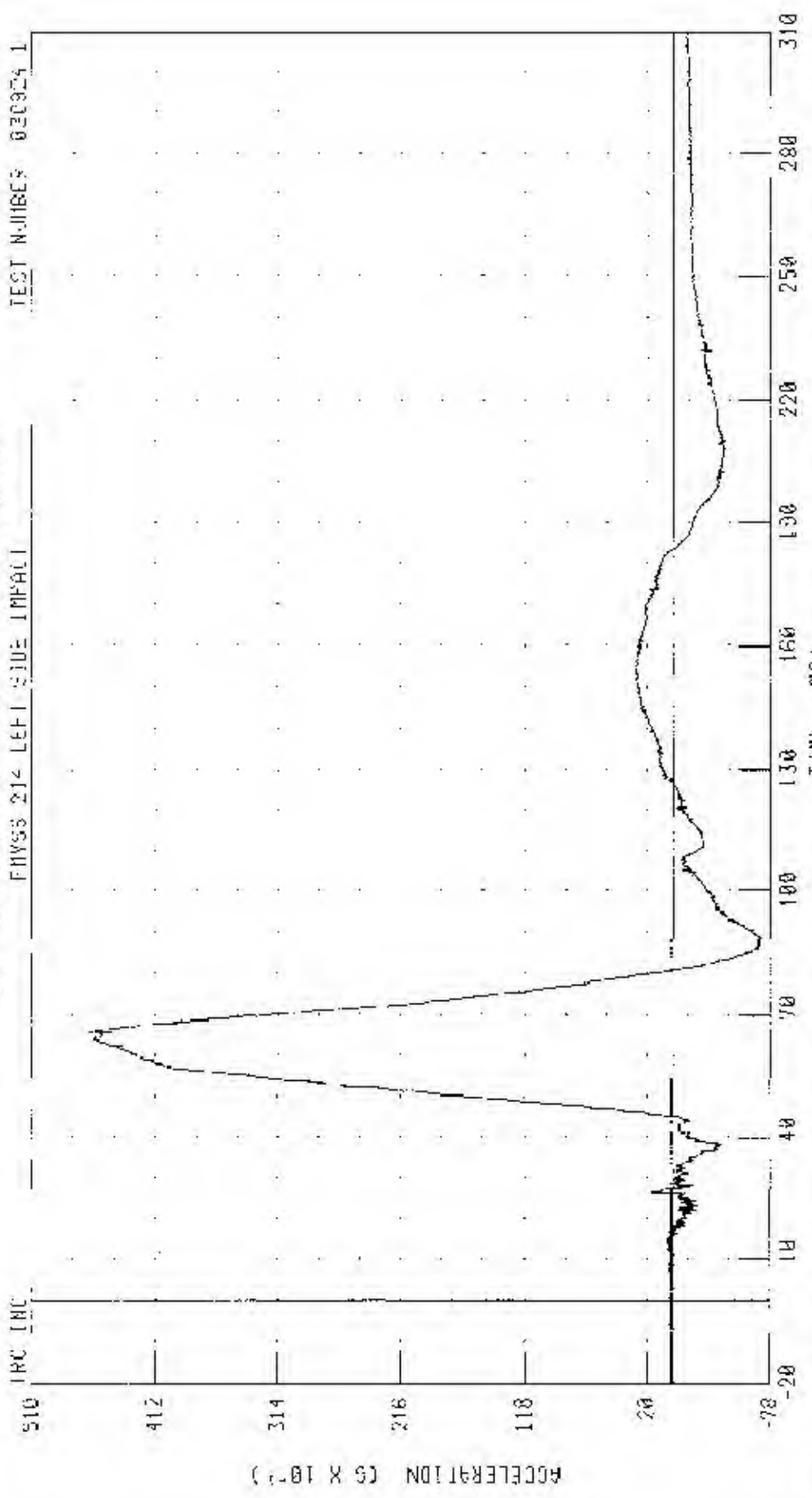
CHANNEL HFDXV4 FILTER CH CLASS 180

45/26 4FT 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION

TEST NUMBER: 030924-1

PHYS 214 LEFT SIDE IMPACT



CHANNEL: HEDY34 FILTER: CH CLASS 1006

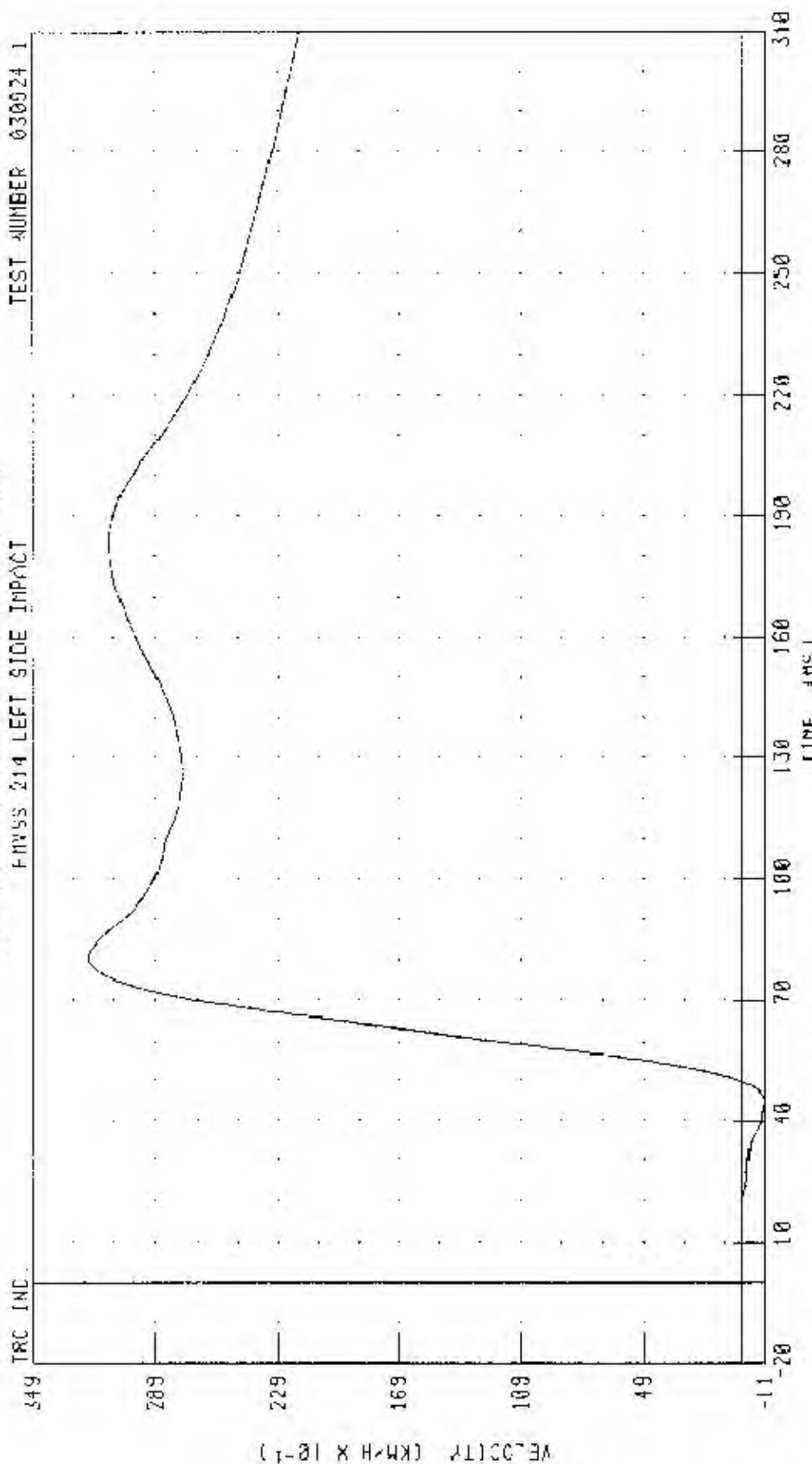
PEAK DATA 45 52 0 0 00 00 MS, 7 13 0 0 00 50 MS

55/20 KPH 00 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1

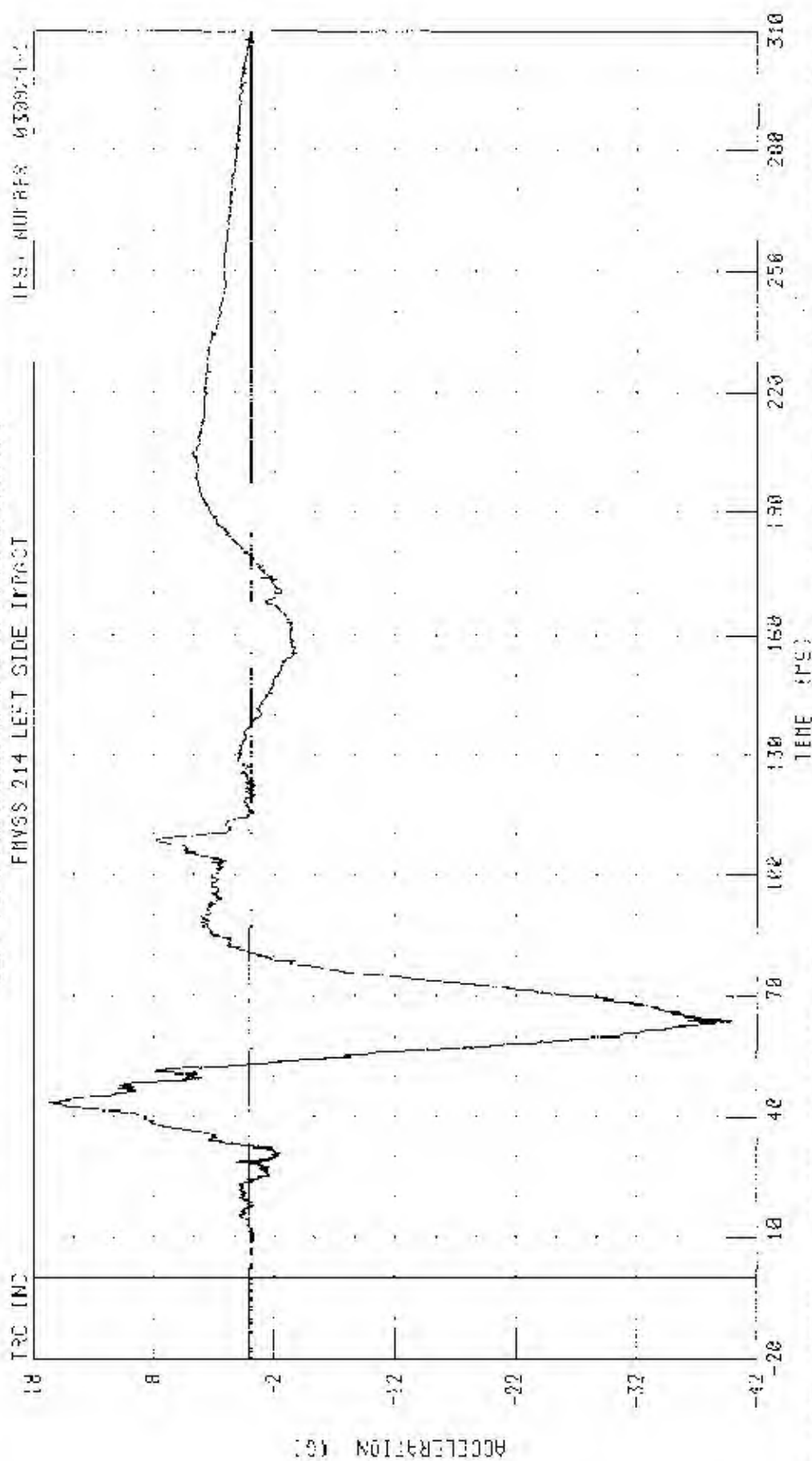


CHANNEL HEDYV4 FILTER CH. CLASS 180

PEAK DATA: 32.19 KM/H @ 80.64 MS; -1.05 KM/H @ 45.04 MS

30/70 MPH 90 DEGREE SIDE IMPACT (MOVING, DEFORMABLE BARRIERS) INTO LEFT SIDE OF 1984 LEXUS GX300

LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION



CHANNEL HED204 FILTER CH CLASS 1000

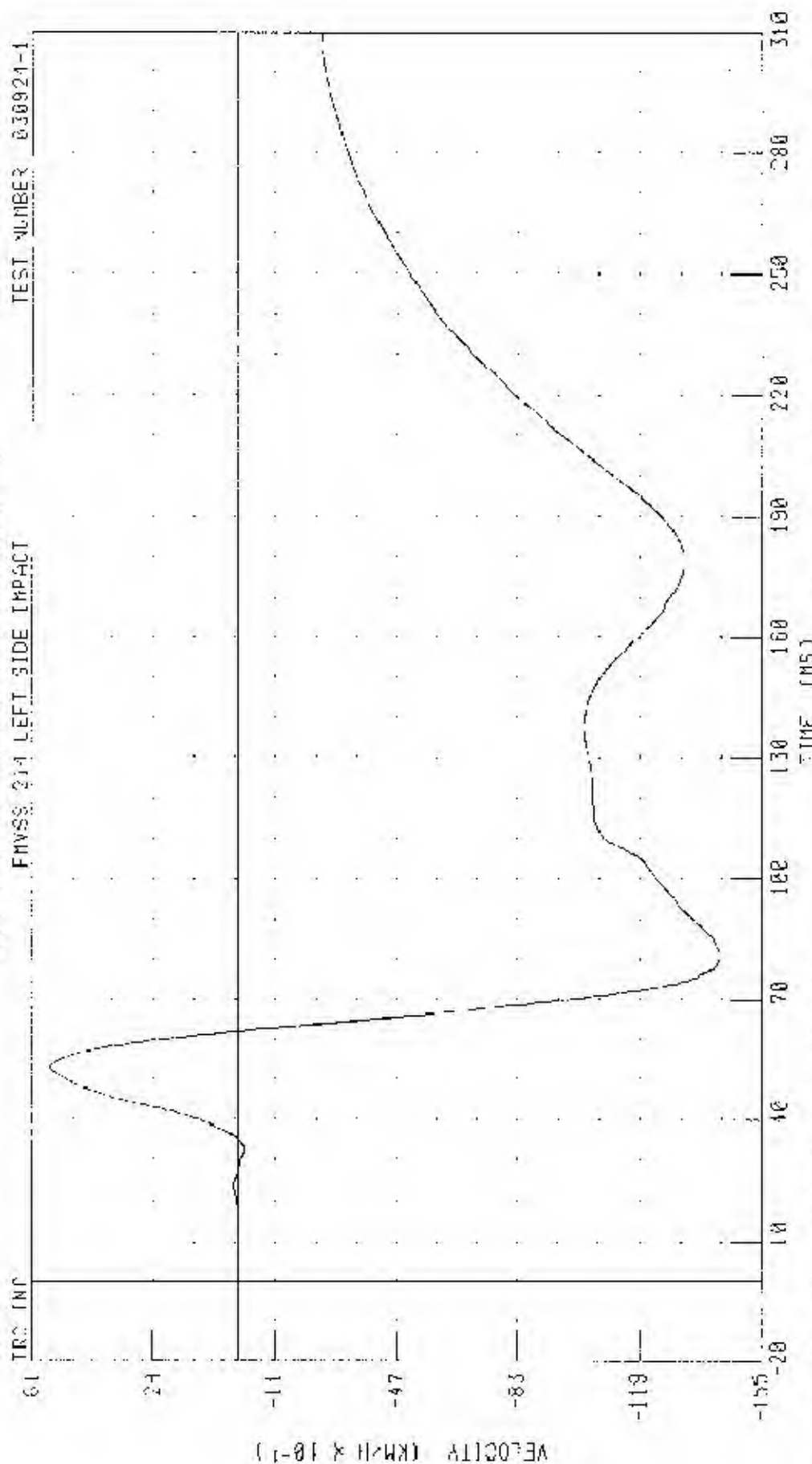
PEAK DATA 10 84 0 0 4 3 60 MS, -39 77 0 0 64 08 MS

55-26 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY

TEST NUMBER 030924-1

FMVSS 214 LEFT SIDE IMPACT

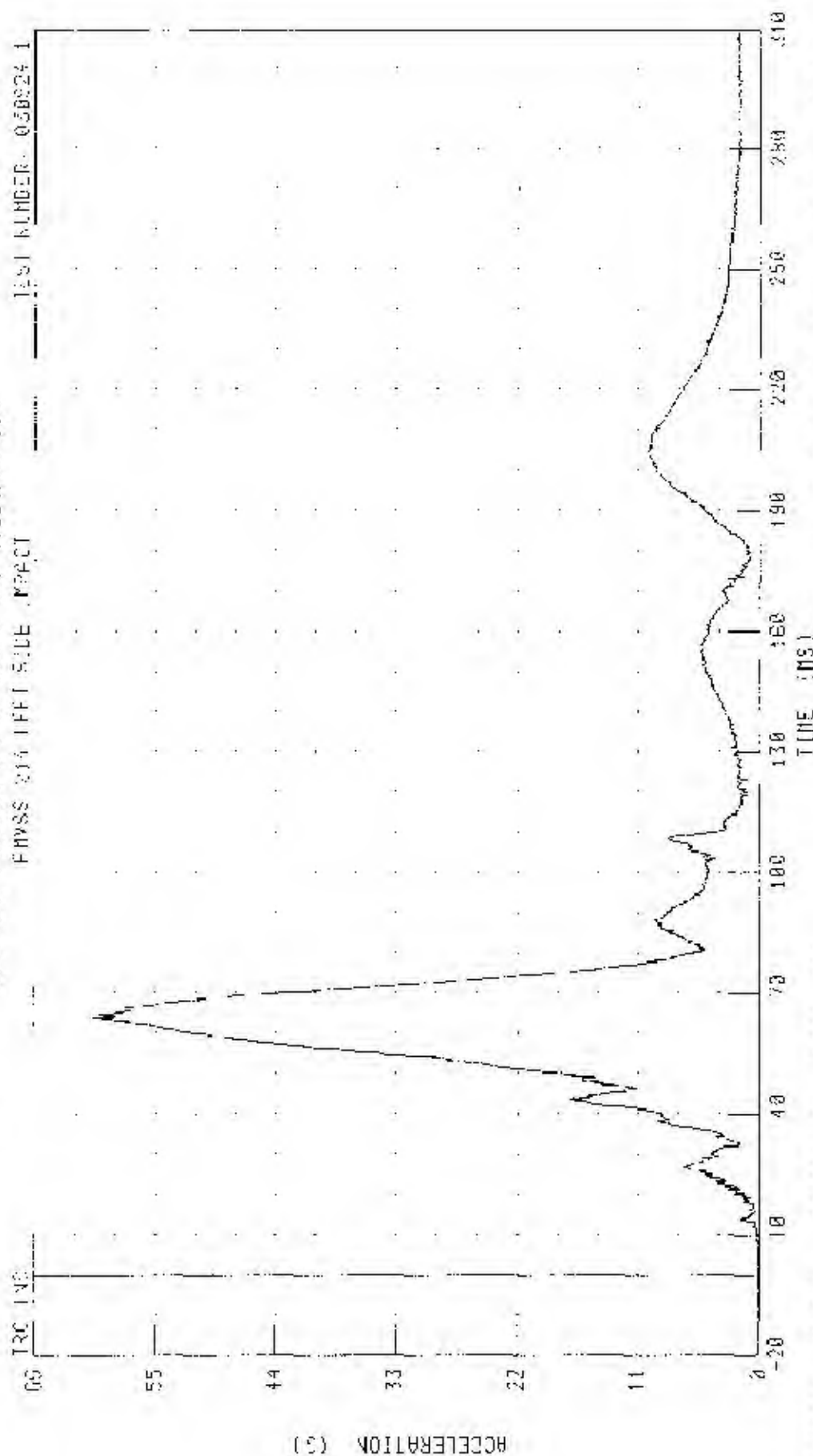


CHANNEL HED214 FILTER CH CLASS 180

PEAK DATA 5.80 KPH @ 52.56 MS, 14.26 KPH @ 31.34 MS

55.20 GPH 90 DEGREE SIDE IMPACT (MOVING DEFENDABLE BARRIERS) INTO LEFT SIDE OF 130- LFVUS D4332

LEFT REAR PASSENGER P-01 RESULTANT ACCELERATION



CHANNEL 4EDR04 FILTER CH. CLASS 1000

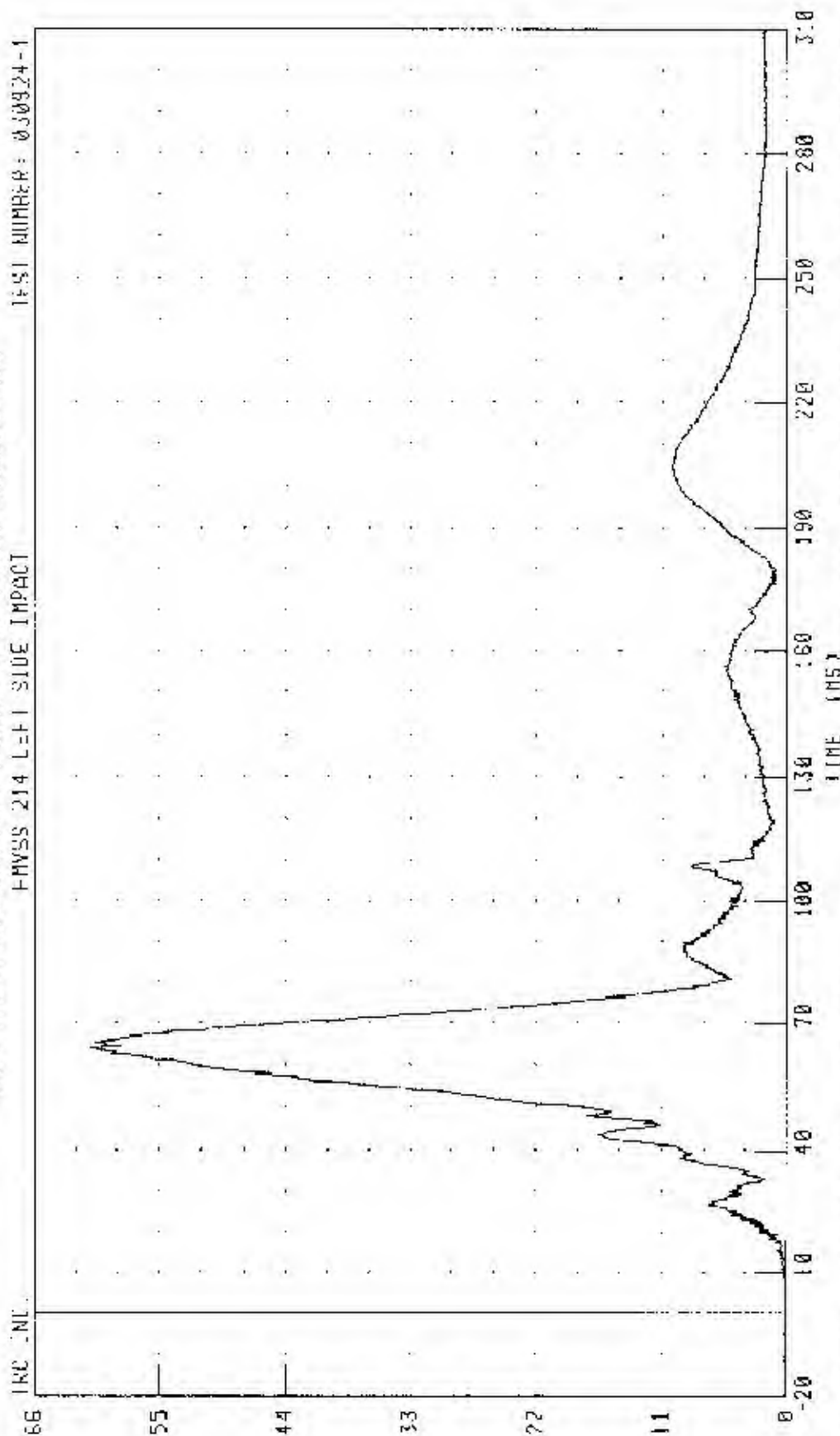
PEAK DATA: 03 09 01 00 RS, 0 07 0 0 -10 95 MS

55/28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD RESULTANT RHOMBDANT ACCELERATION

PHYSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL HEDRR4 FILTER CII CLASS 1000

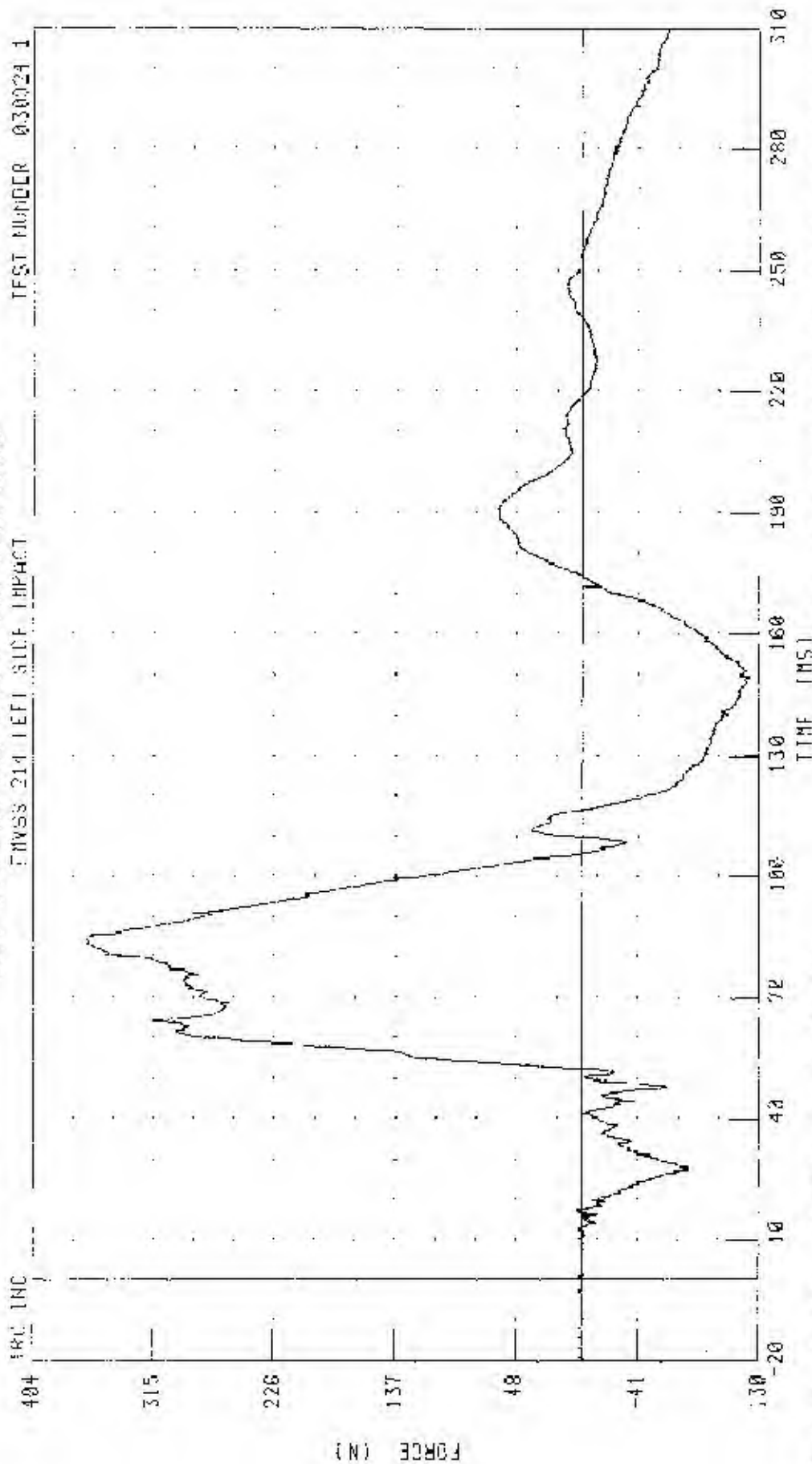
PEAK DATA: 61 10 6 @ 64 32 MS, 3.01 G @ 10.00 MS

55/26 KFH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE HARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER WHEEL X-AXIS SHEAR FORCE

TEST NUMBER 030924-1

TRUSS 214 LEFT SIDE IMPACT



CHANNEL: NEXUS4 FILTER: CH CLASS 1000

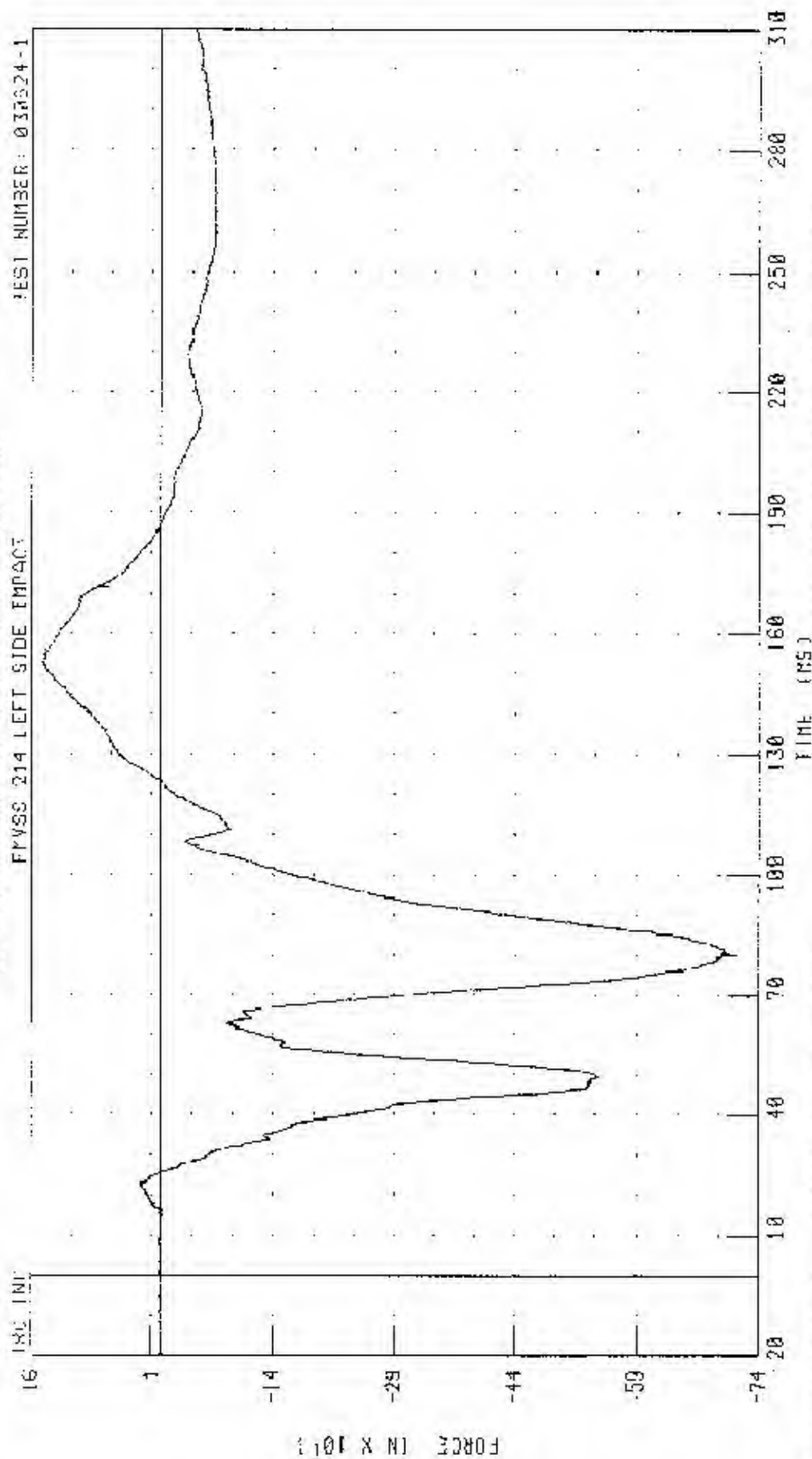
PEAK DATA 364 30 N @ 83 29 MS, -173 @ 145 52 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORNABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE

TEST NUMBER: 030924-1

FMVSS 214 LEFT SIDE IMPACT



TIME (MS)

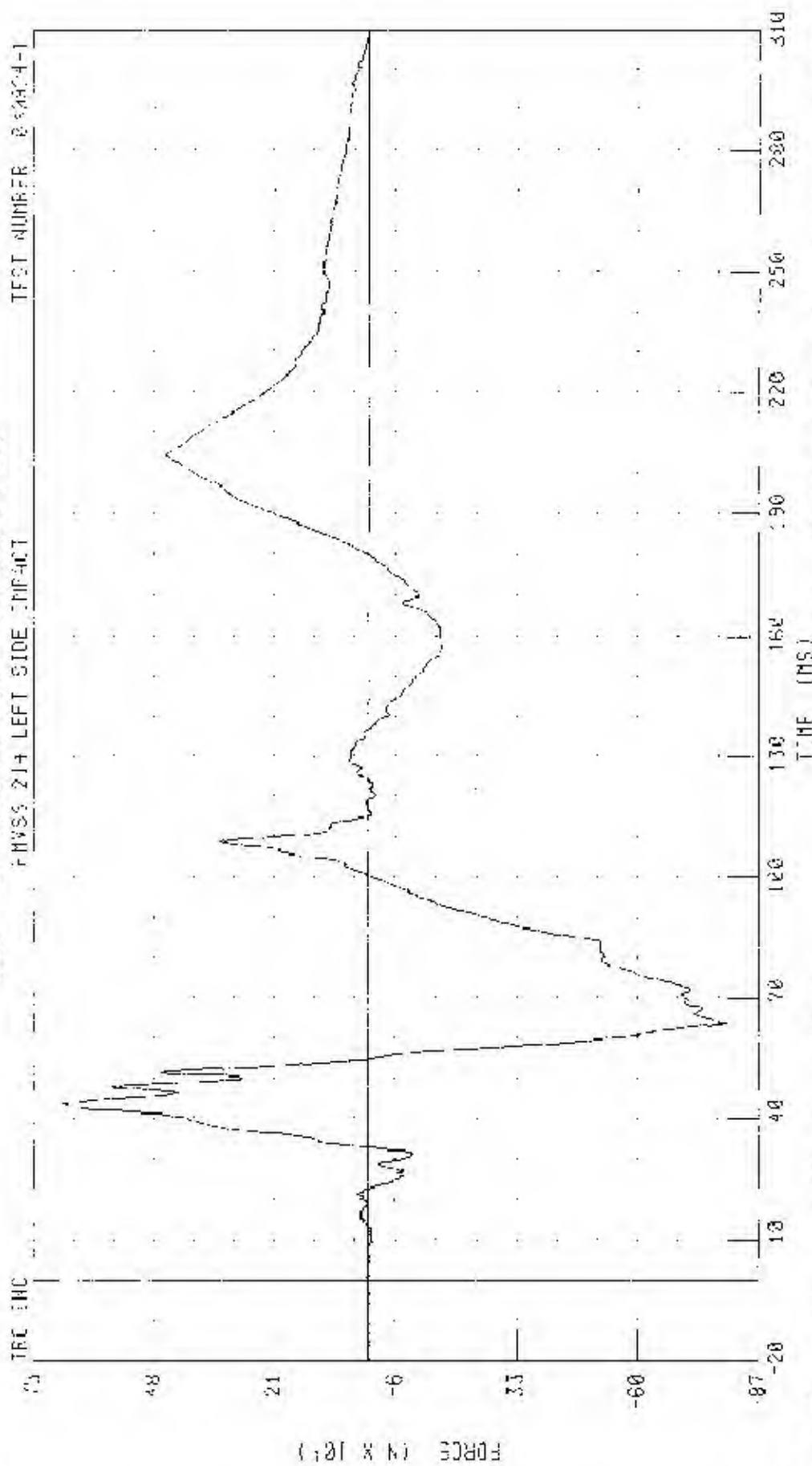
CHANNEL NEKYF4 FILTER CH CLASS 1000

PEAK DATA: 145.86 N @ 153.28 MS, -713.74 N @ 90.32 MS

232003 678314001 JIN JIE 1984-03-03 F 0034 FENG 003732

THE 1993 SUBSIDIARY HONG KONG MODEL FORCE

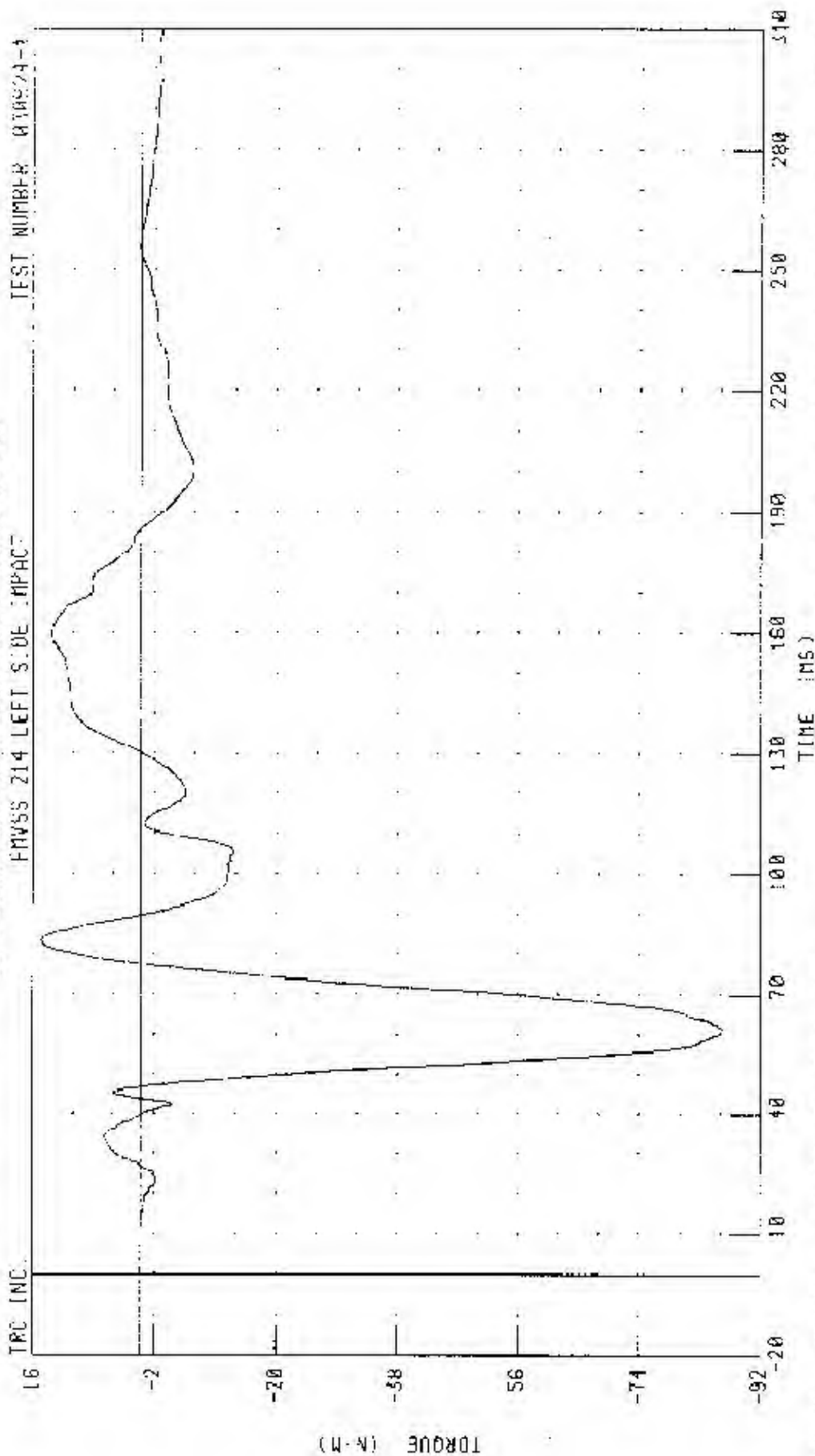
TEST NUMBER 054904-1



CHANNEL K.K.:4 TEL:03-455 1244

	602	37 H	0	43	69	105	158	19	25	34	105	
PEAK	00-0	602	37 H	0	43	69	105	158	19	25	34	105

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARrier) INTO LEFT SIDE OF 2004 LEXUS RX330
 LEFT REAR PASSENGER HICK MOMENT ABOUT X AXIS



CHANNEL: NEKX4 FILTER: CH CLASS 600

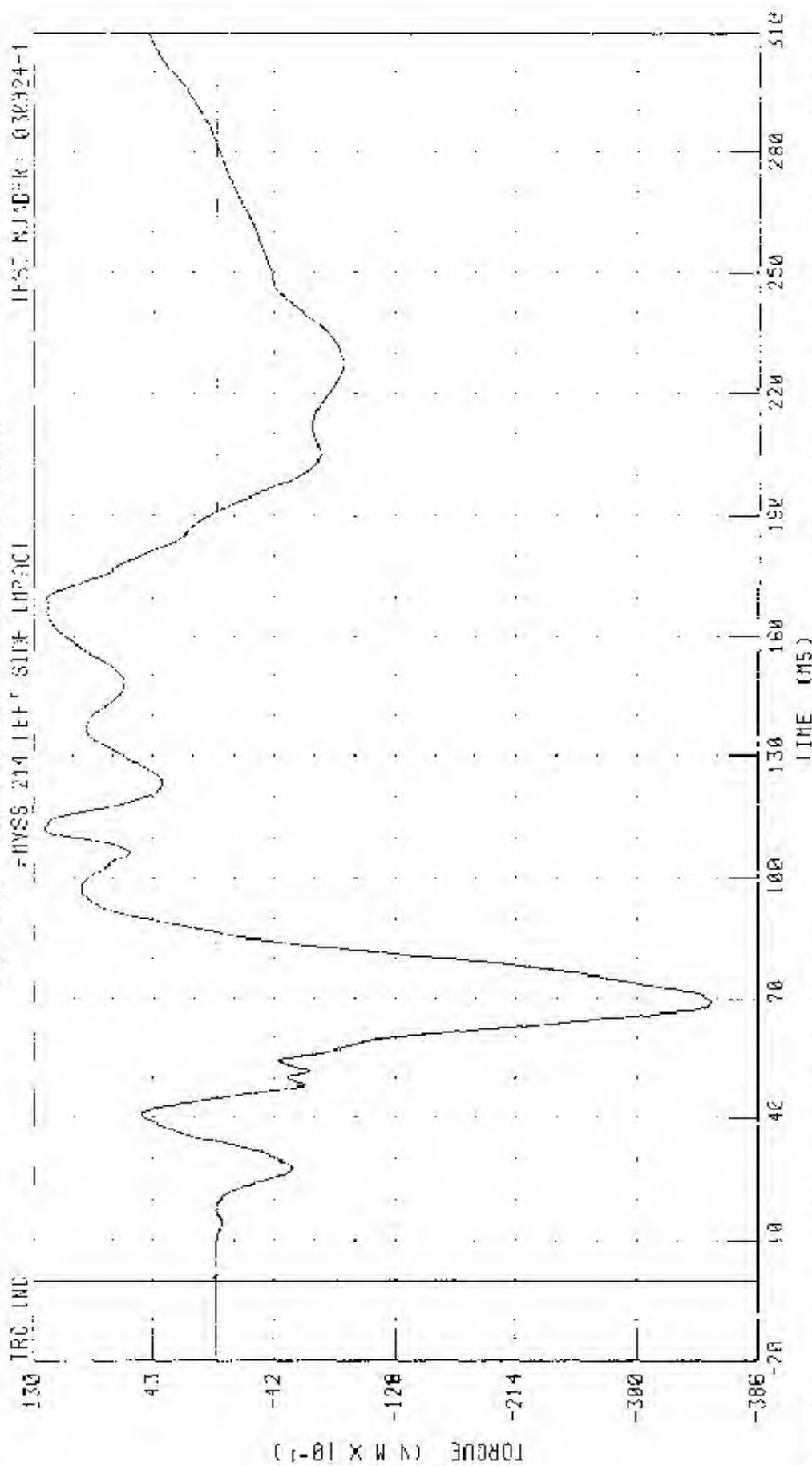
PEAK DATA 14 63 N M @ 83 28 MS, -88 26 N M @ 61 35 MS

55-26 RPT 00 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS

INSTRUMENT: 030924-1

INSTRUMENT: 030924-1

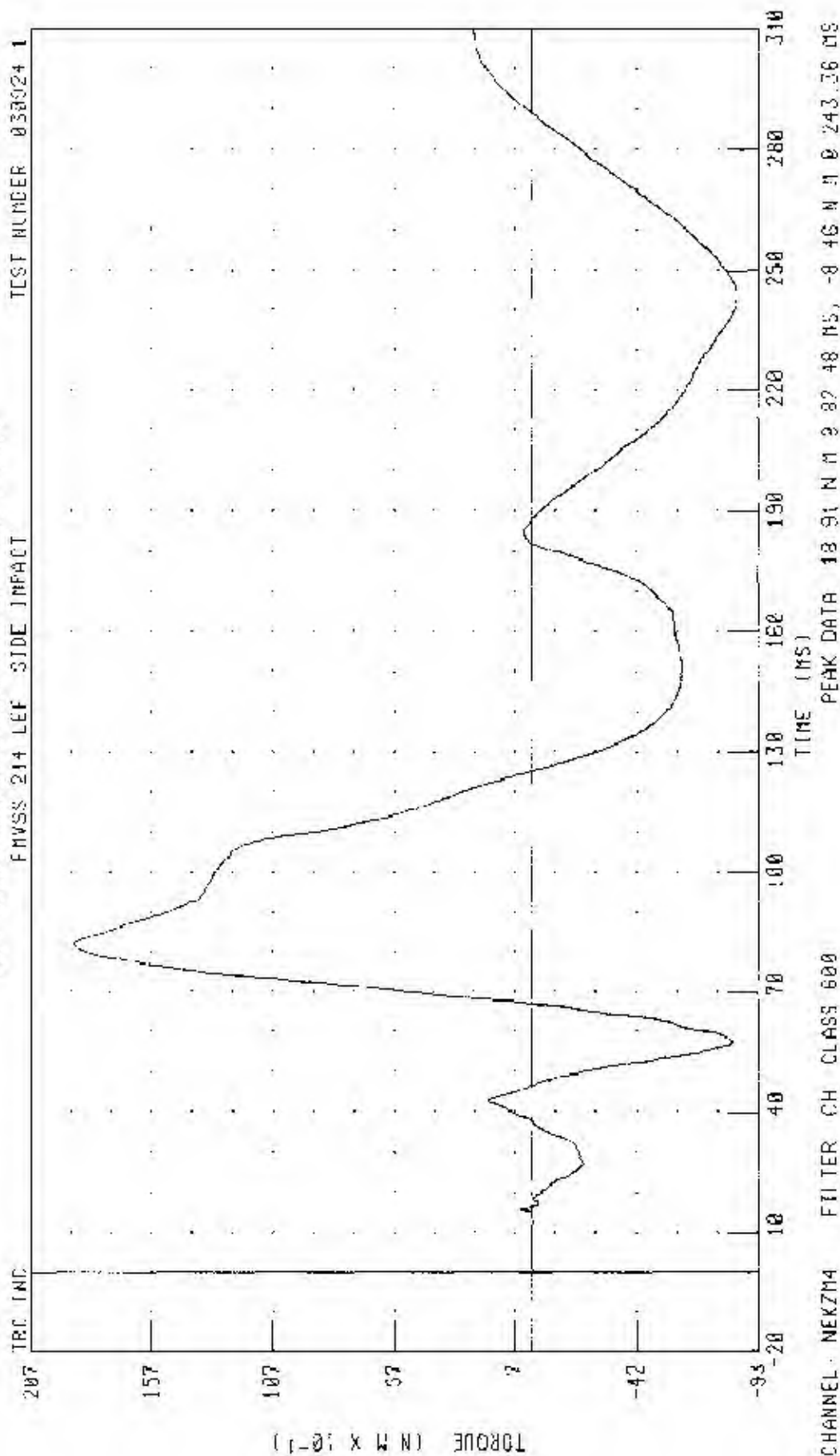


CHANNEL: NFXY14 FILTER: CR CLASS: 600

PEAK DATA: 12 17 N M 6 112 32 MS, -35 28 N M 6 69 20 35

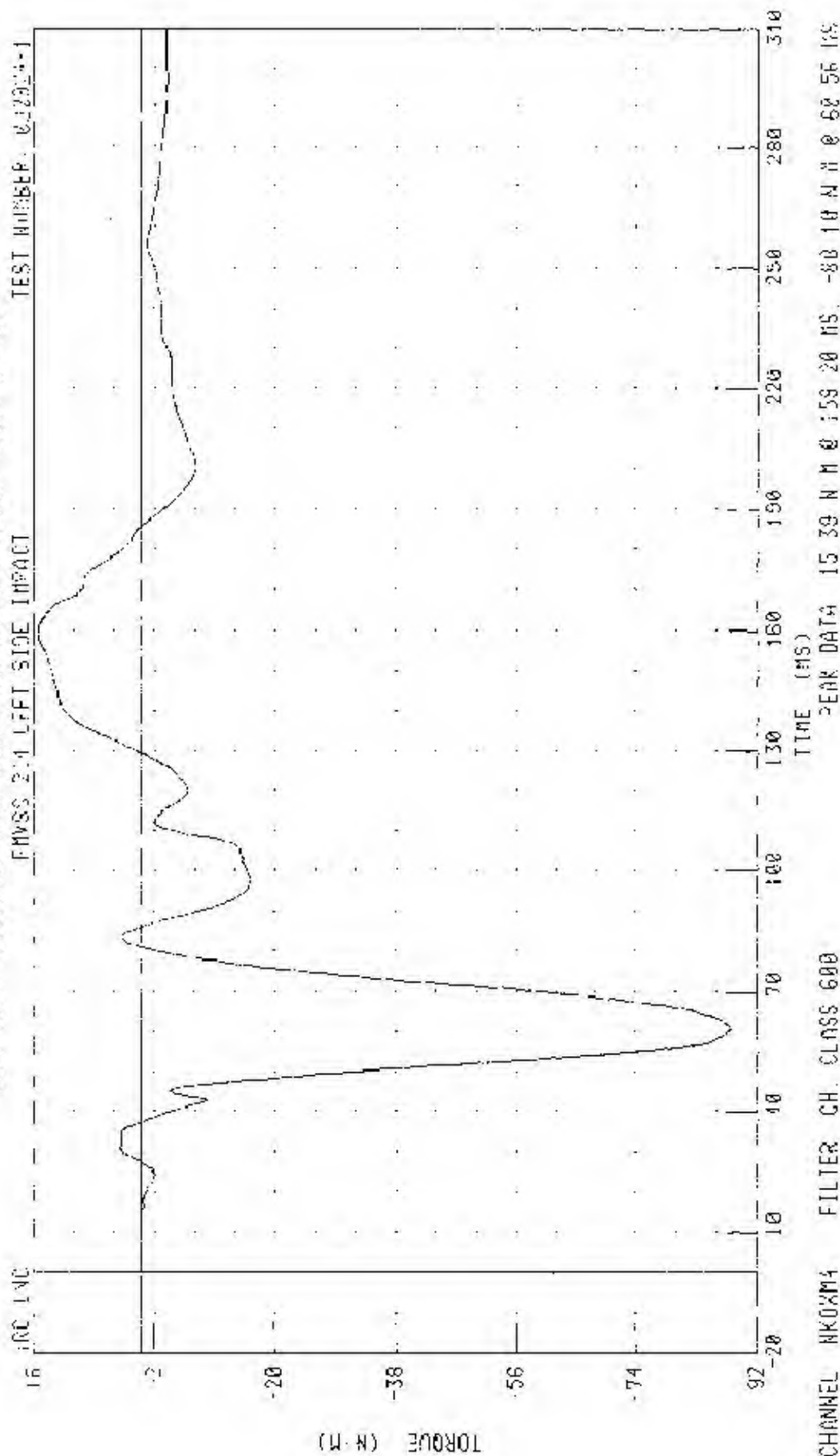
55/28 MPH 90 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER NECK MOMENT ABOUT / 0X15



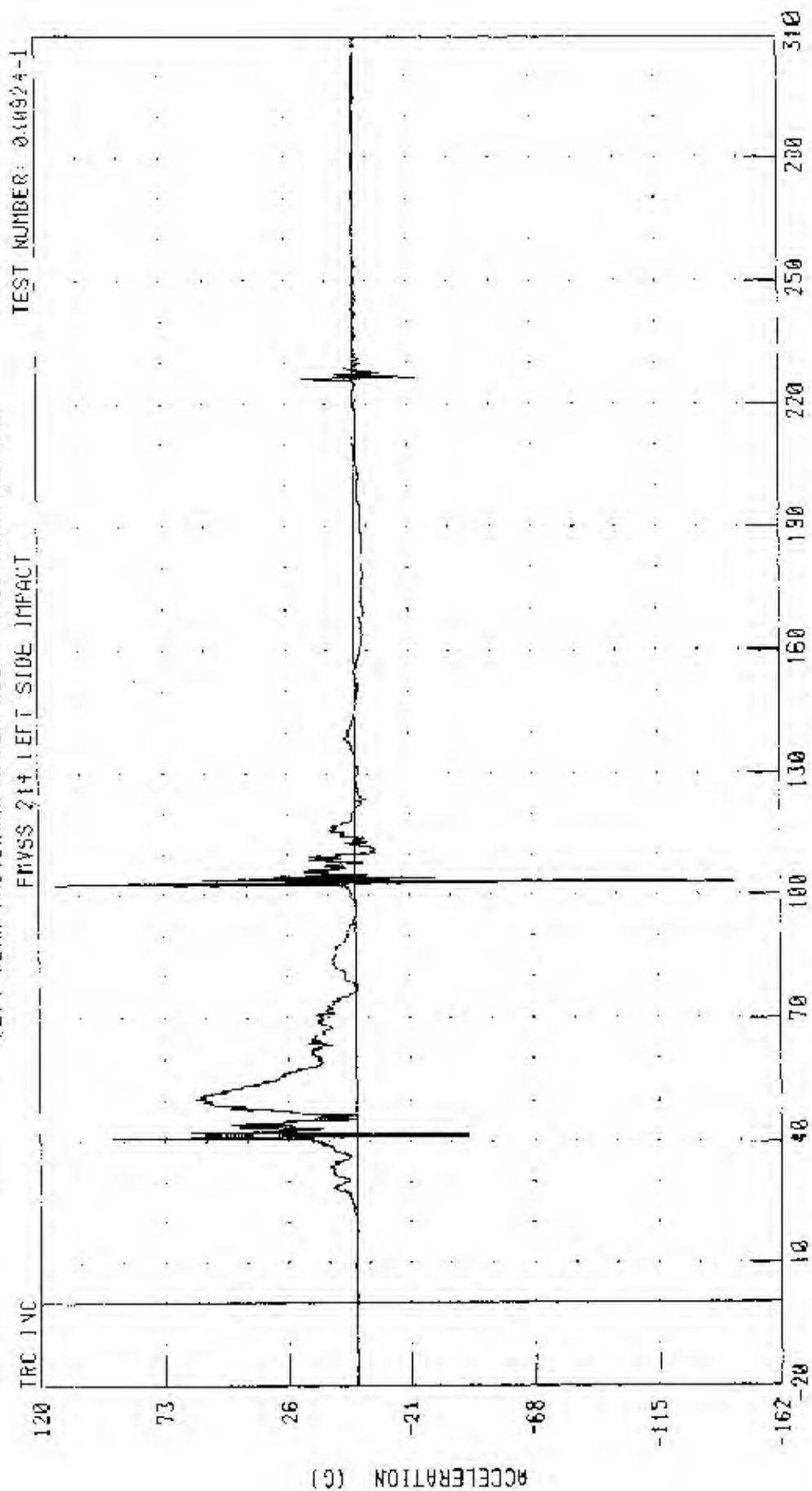
50/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS



55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER UPPER RIG Y AXIS ACCELERATION



CHANNEL: LURYG4 FILTER: CH CLASS: 1000

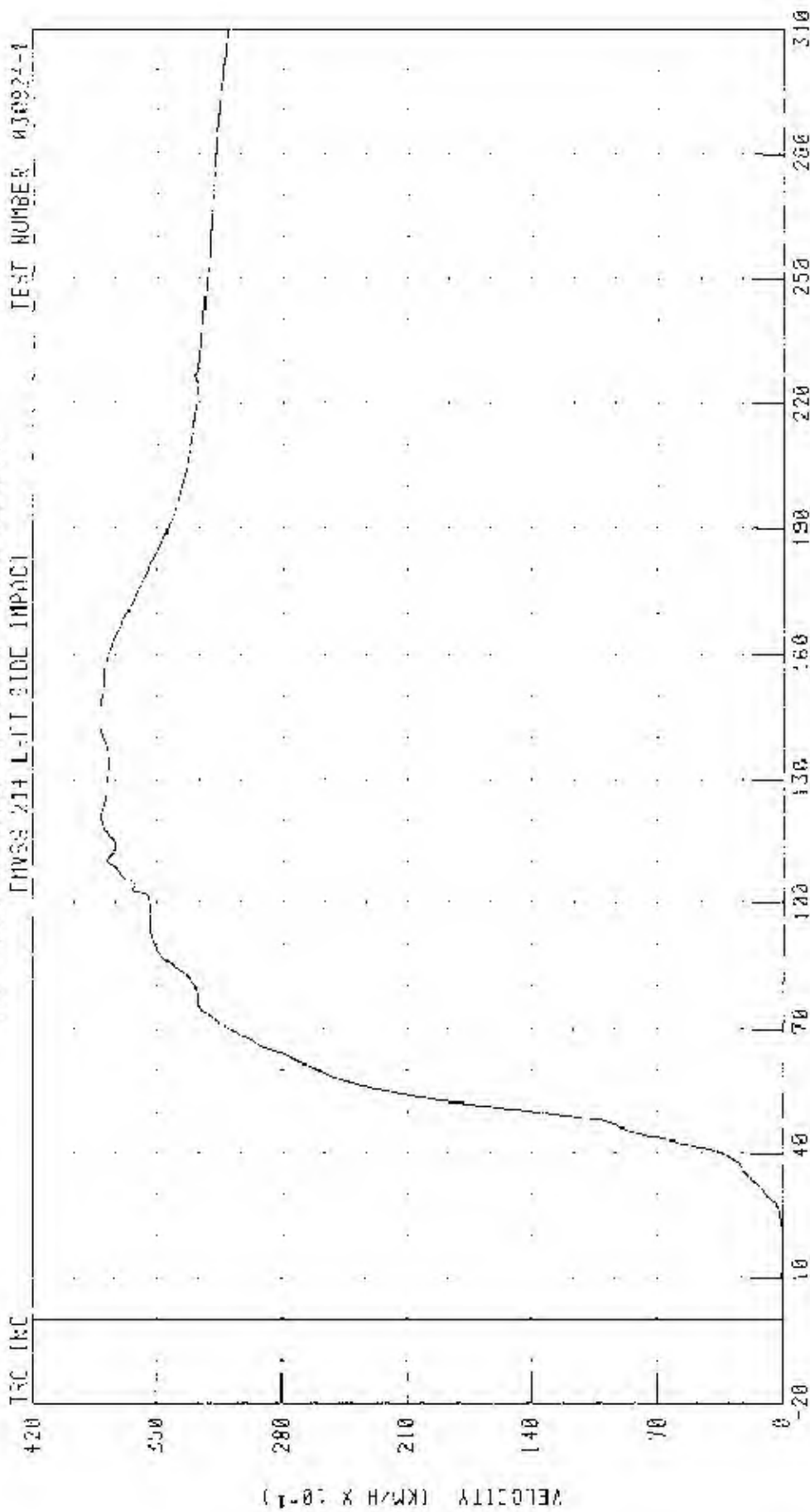
PEAK DATA: 114.70 G @ 102.96 MS -144.15 G @ 103.52 MS

45/28 MPH 50 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE 3- 2004 LEXUS RX330

LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY

TEST NUMBER 030924-1

PHASE 214 LEFT SIDE IMPACT



TIME (MS)

PEAK DATA: 36.24 MPH @ 144.88 MS; 0.20 G1/4 @ 0.00 MS

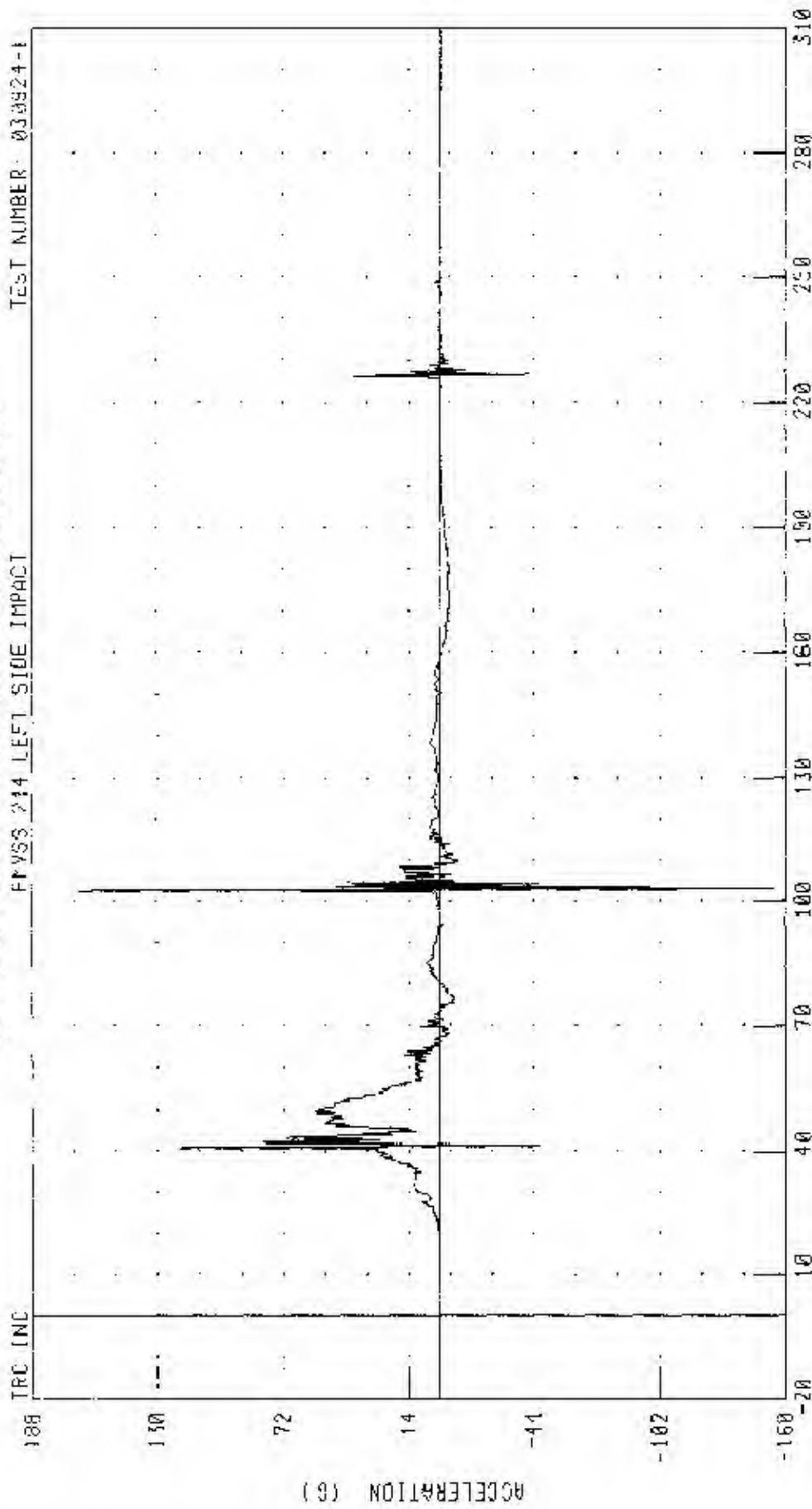
CHANNEL L0RYV4 FILTER: CH CLASS 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX400

LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

TEST NUMBER: 030924-1

FRYSS 214 LEFT SIDE IMPACT



TIME (MS)

CHANNEL1 FRYSS 214 FILTER CH CLASS 1000

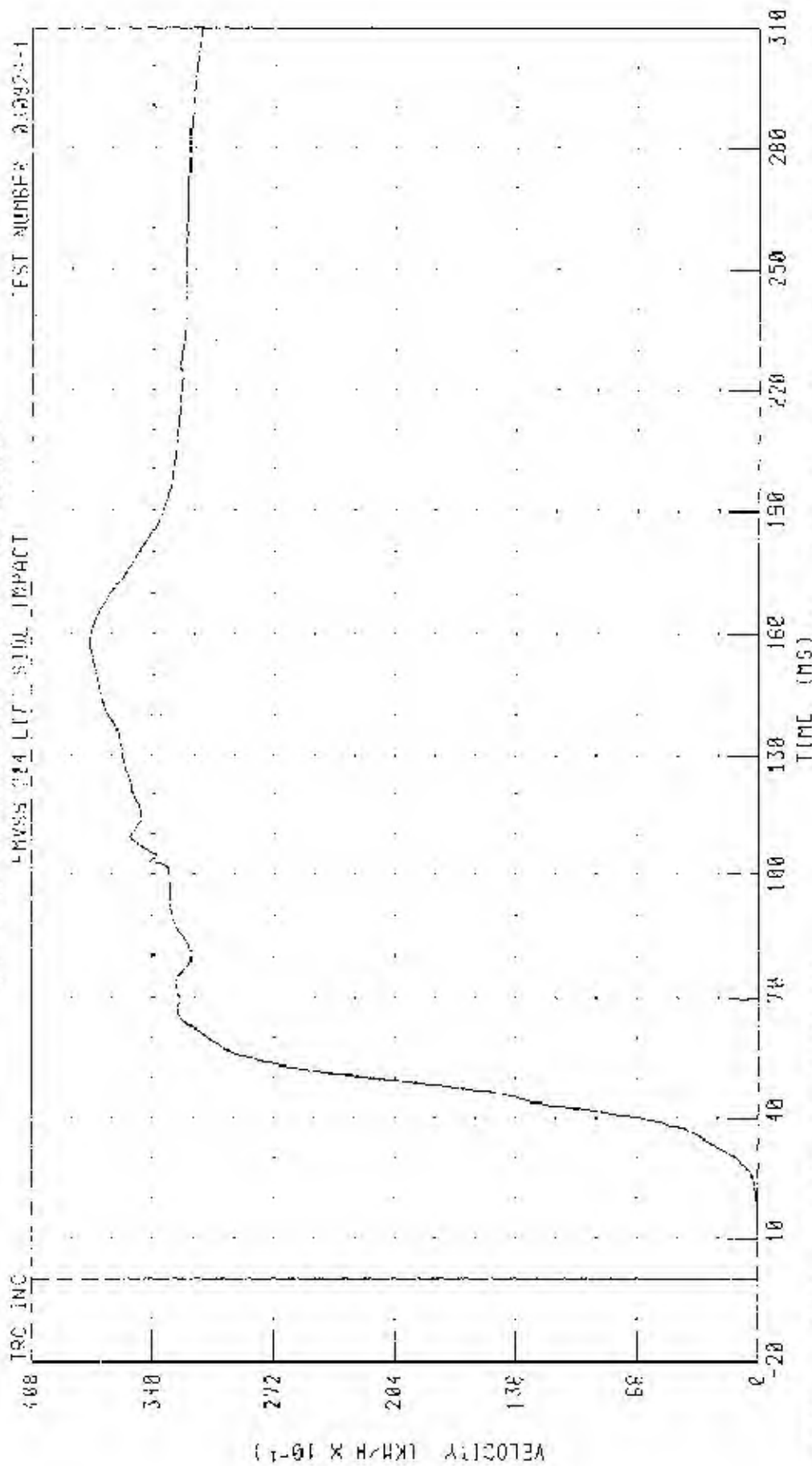
PEAK DATA: 165.92 G @ 102.98 MS, -154.17 G @ 103.44 MS

55.28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER LOWER R RISK Y-AXIS VELOCITY

WVSS 014 LEFT SIDE IMPACT

TEST NUMBER 030924-1

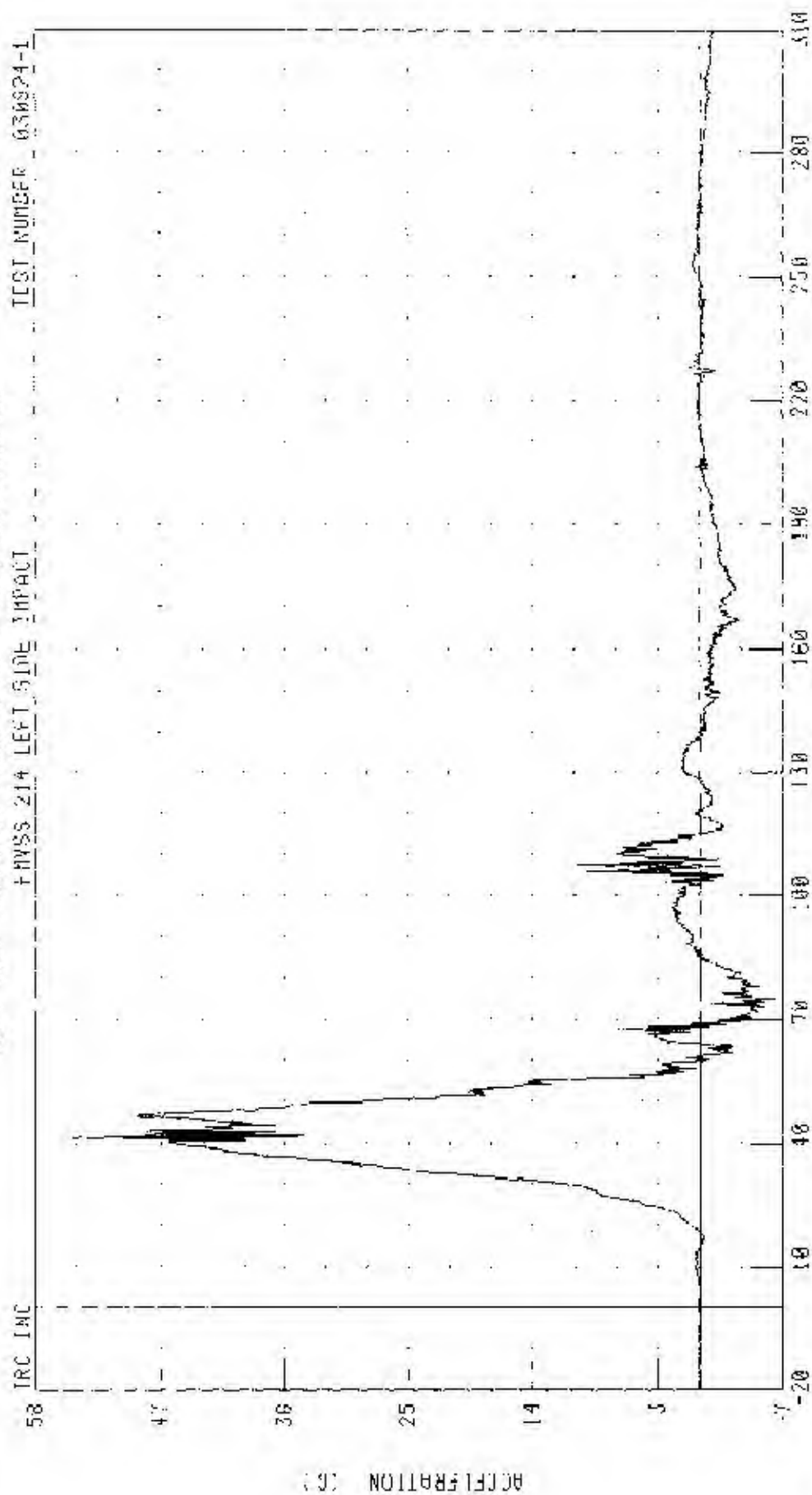


CHANNEL LRVV4 FILTER CH CLASS 180

PEAK DATA 37.54 KPH @ 158.16 MS, 0.00 KPH @ 0.00 MS

55/28 MPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARREL INTO LEFT SIDE OF 2004 LEXUS RX330P

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION



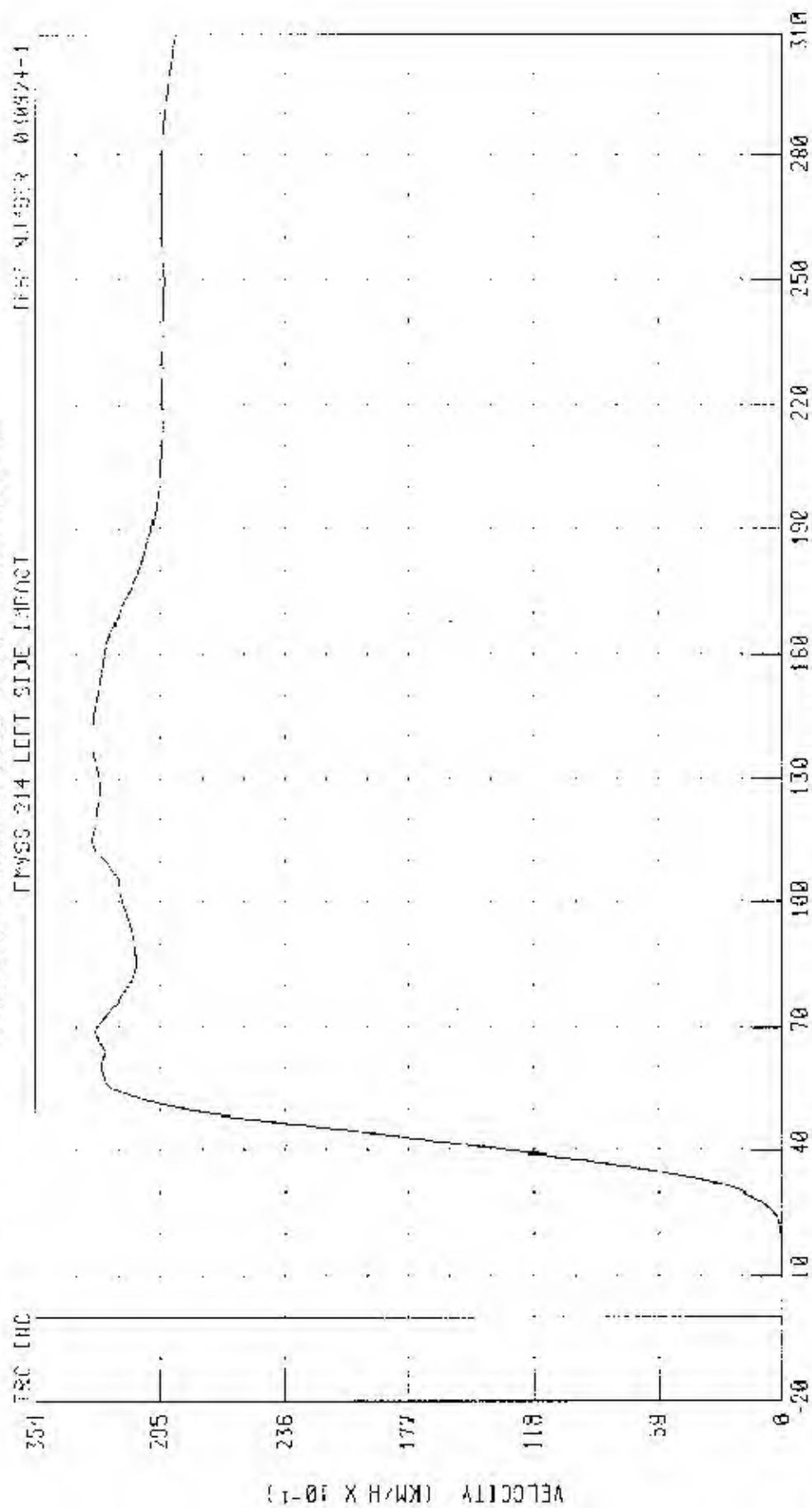
CHANNEL T12YC4 FILTER CH. CLASS 1000

PEAK DATA 35 35 0 0 41 14 MS, -E163 0 0 75 28 15

55/23 KPH 90 DEGREE SIDE IMPACT (MOVING IMPERMEABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER LOWER SPINE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER 0004924-1



TIME (MS)

CHANNEL T12VV4 FILTER CH C1 C55 180

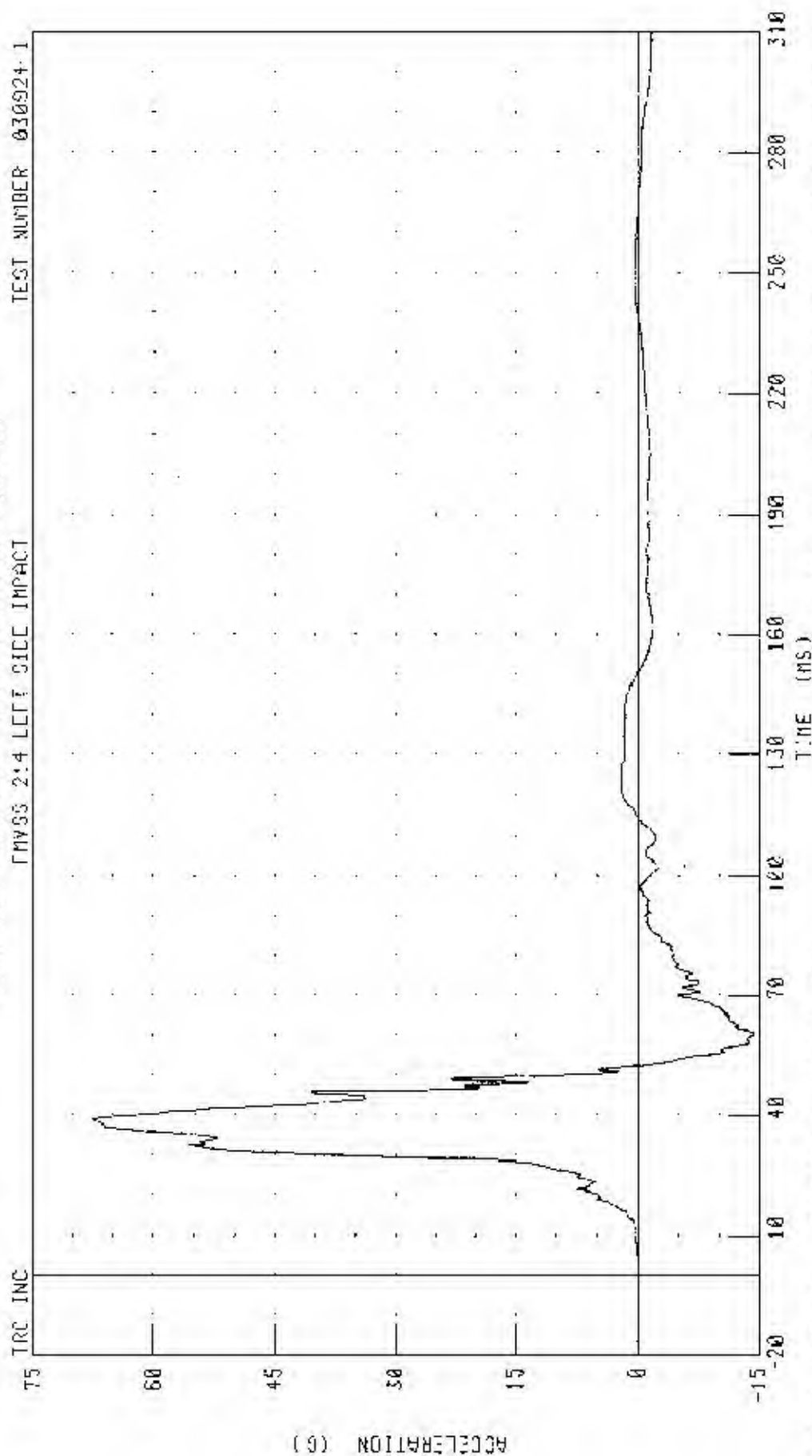
PFOR DATA 32 71 KM/H @ 114 88 MS; 0 000 KM/H @ 0.00 MS

55/28 KPI- 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

TEST NUMBER 030924-1

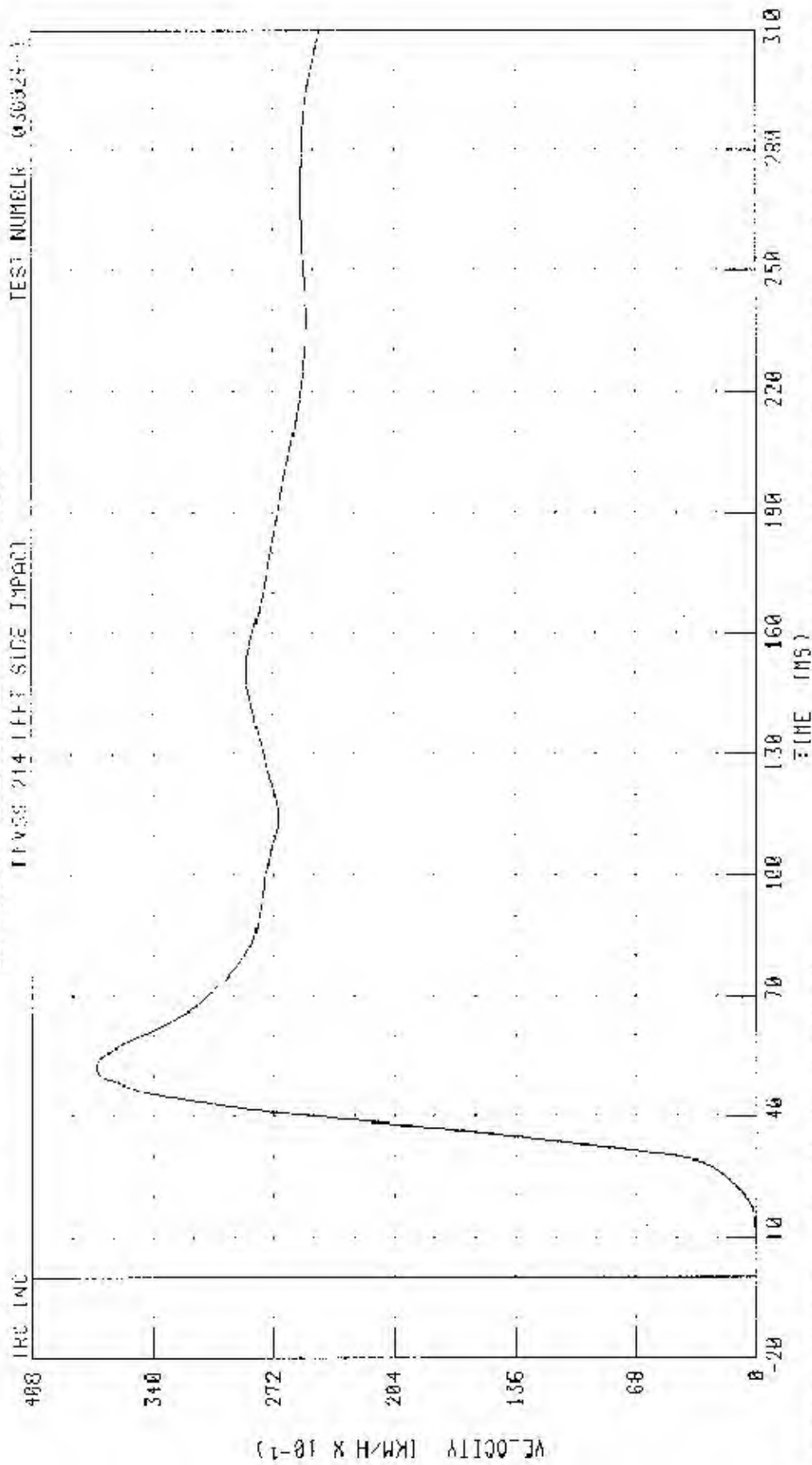
FMVSS 214 LEFT SIDE IMPACT



CHANNEL PEVYG4 FILTER CH. CLASS 1000

PEAK DATA 6V 64 G @ 50.96 MS, 14.38 G @ 60.53 MS

55/20 KPH 90 DEGREE SIDE IMPACT: MOVING DEFORMABLE BARRIER: INTO LEFT SIDE OF 2004 LEXUS RX330
 LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY



CHANNEL PELVYV4 FILTER CH CLASS 180

PEAK DATA 37 21 KM/H @ 52.40 MS, 0.00 KM/H @ 0.00 MS

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

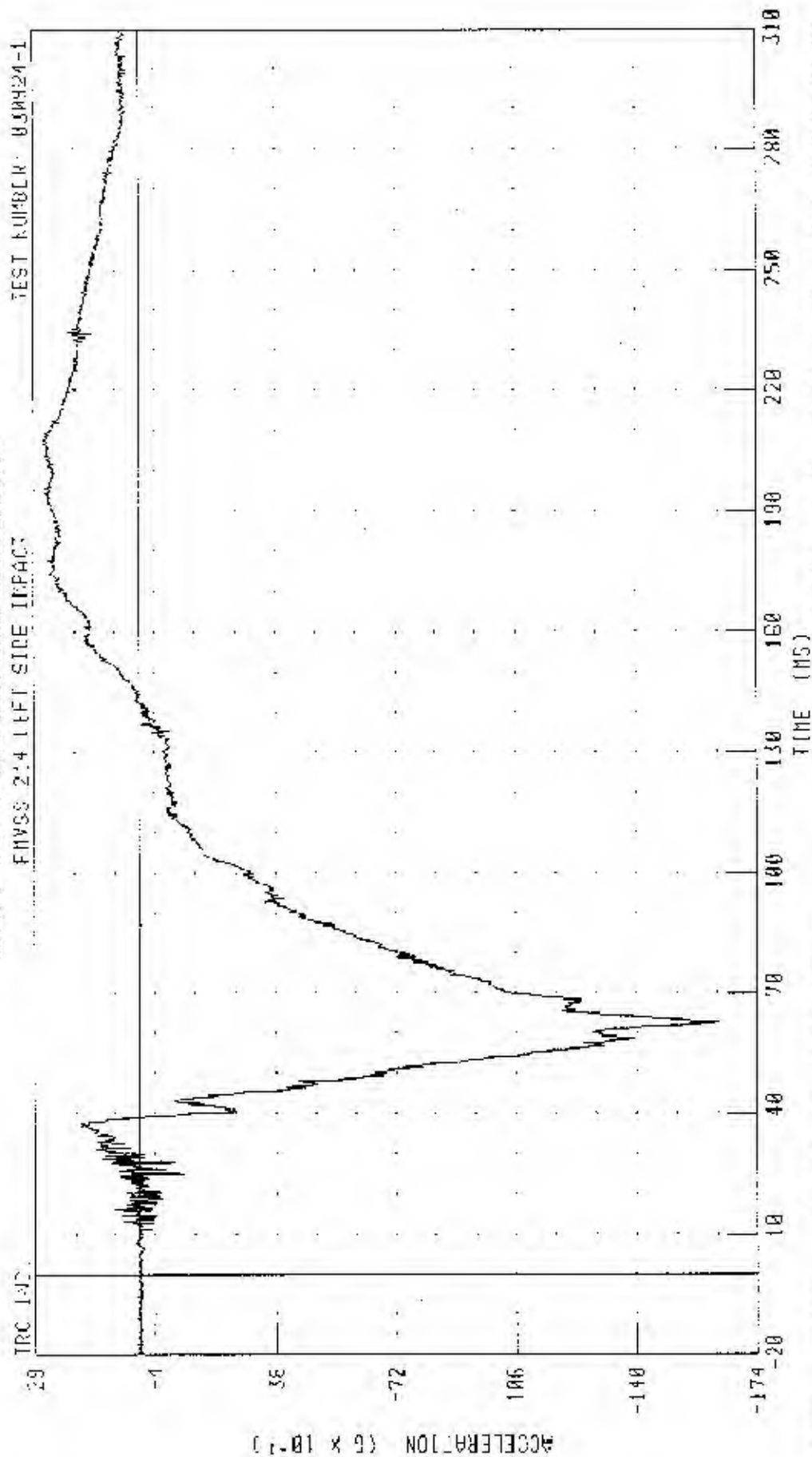
Integration Data - Filter Class 180 - Redundant

55.78 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2034 LEXUS RX330

DRIVER FOOT X-AXIS FLUORANT ACCELERATION

ENVSS 2.4 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: IIC0XRI FILTER: CH CLASS: 1000

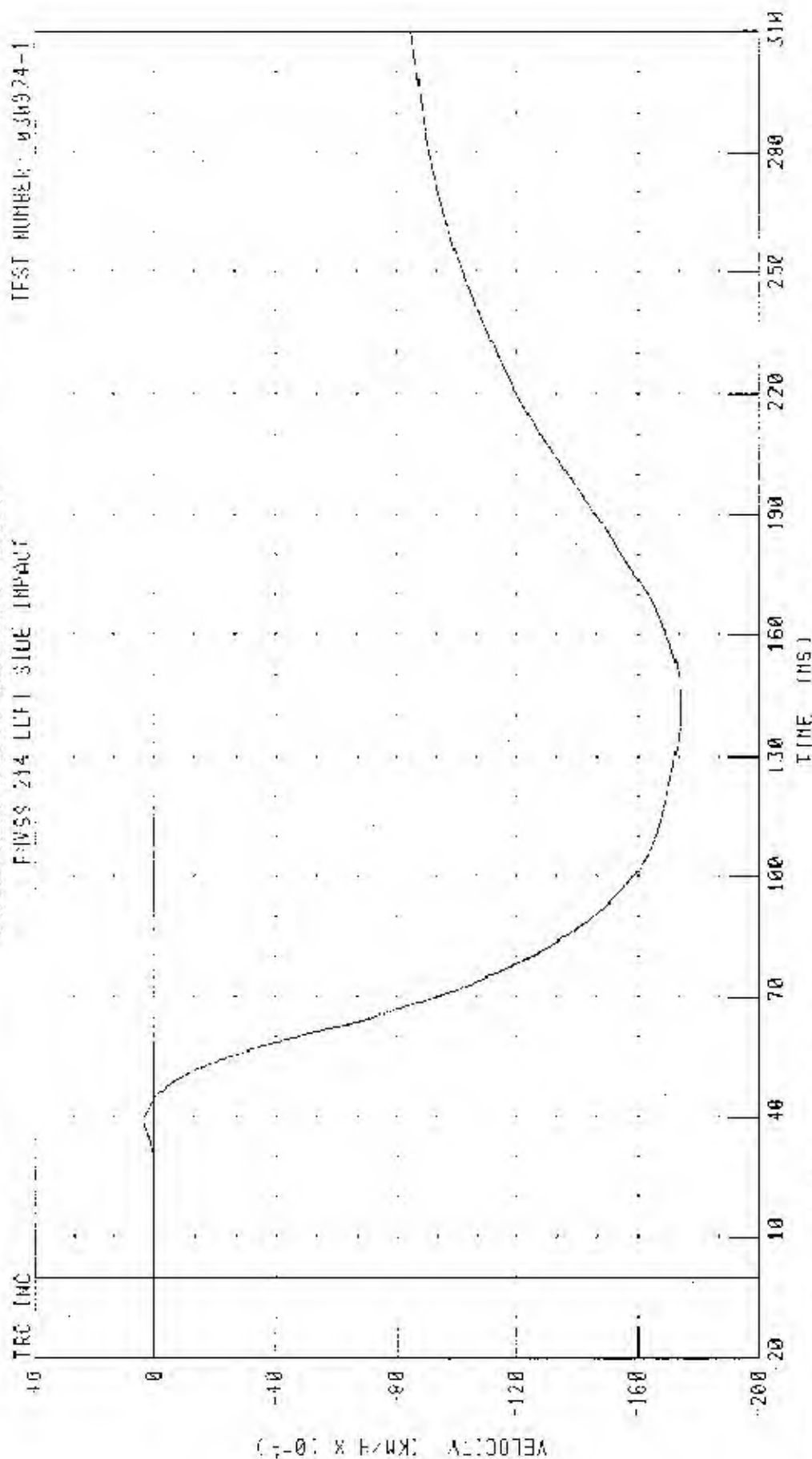
PEAK DATA: 2.76 G @ 206.56 MS, -18.27 G @ 62.64 MS

55-20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2000 LEXUS RX330

DRIVER HEAD X AXIS REDUNDANT VELOCITY

PHYSS 234 LEFT SIDE IMPACT

TEST NUMBER 030924-1



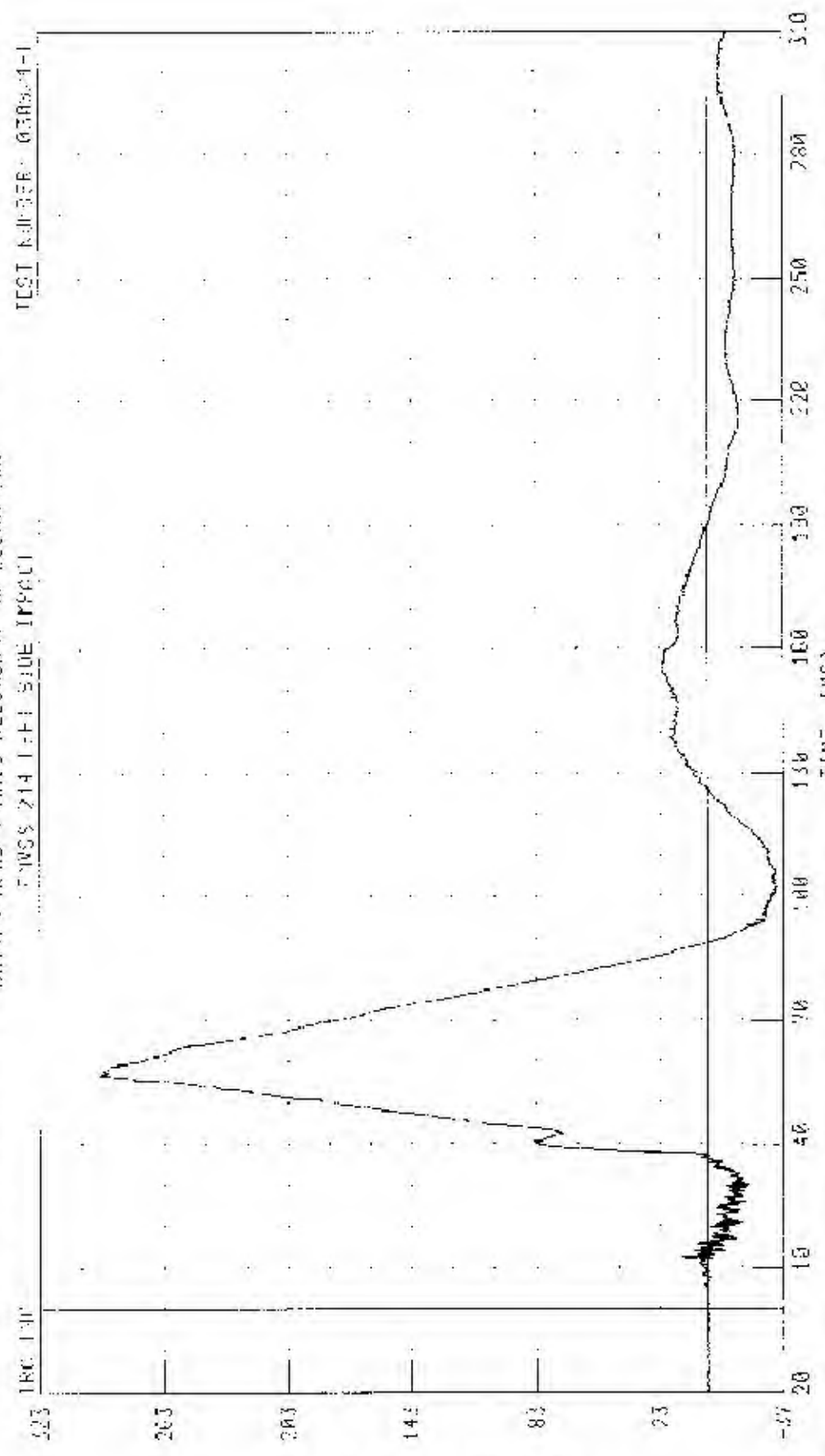
CHANNEL HEDXV1 FILTER CH CLASS 180

PEAK DATA: 0 36 KPH @ 39.12 MS, 17 46 KPH @ 142.32 MS

55-20-K701 90 DEGREE SIDE IMPACT (20V) NO DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 FORD FOCUS RS130

DRIVER HEAD X AXIS REDUCED ACCELERATION

TEST NO: 3556-0385-4-1



(1-0) X (0) NO. 0027000

TIME (MS)

CHANNEL: IEGR1 FILTER: CH: 1000

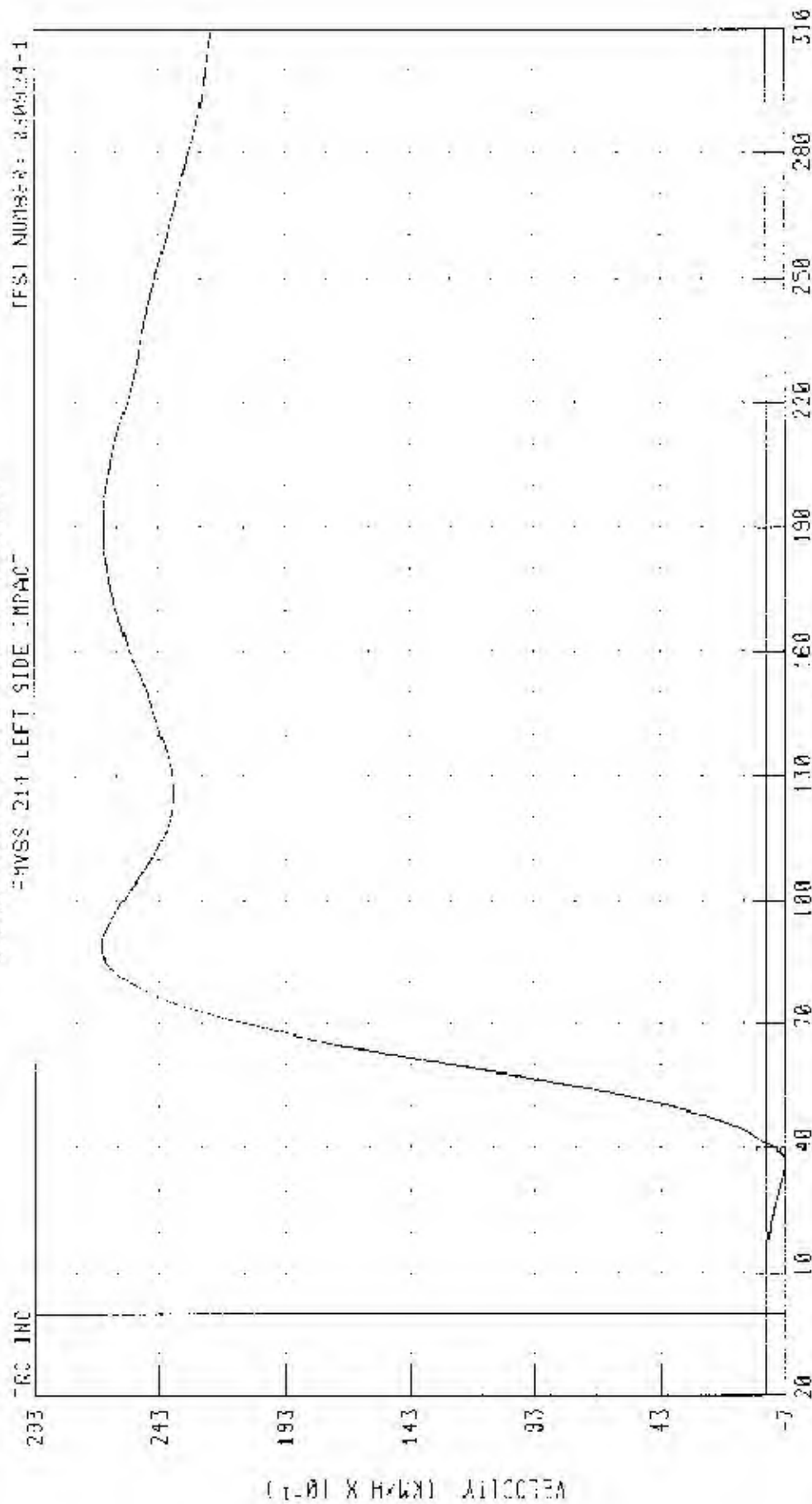
PEAK DATA: 20 43 0 57 64 15; -3 43 0 102 16 78

55/25 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARrier) 1910 LEFT SIDE OF 2004 LEXUS RX330

DRIVER HEAD Y-AXIS REDUNDANT VELOCITY

TEST NUMBER: 050924-1

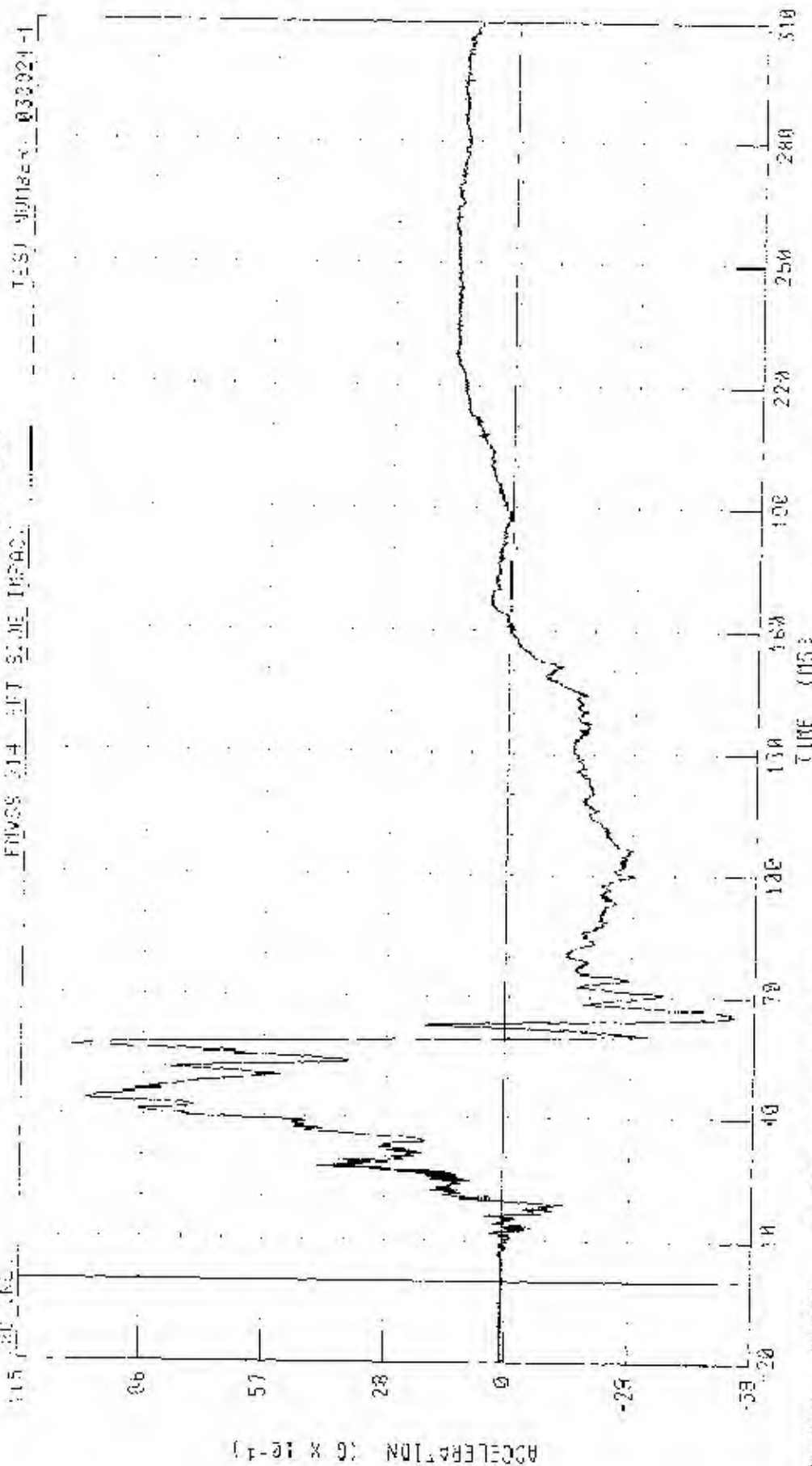
CHVSS 214 LEFT SIDE IMPACT



CHANNEL HEDV11 FILTER: CH CLASS 100

PEAK DATA 26 82 KM/H @ 88 88 MS; -0 67 KM/H @ 25 96 MS

50000 KNO 000 CLEVER SIDE IMPACT (MOVING DEFENDABLE BARRIER) INTO LEFT SIDE OF 2004 FORD EX350
 DRIVER HEAD 2-MS TO DEFENDANT ACCELERATION



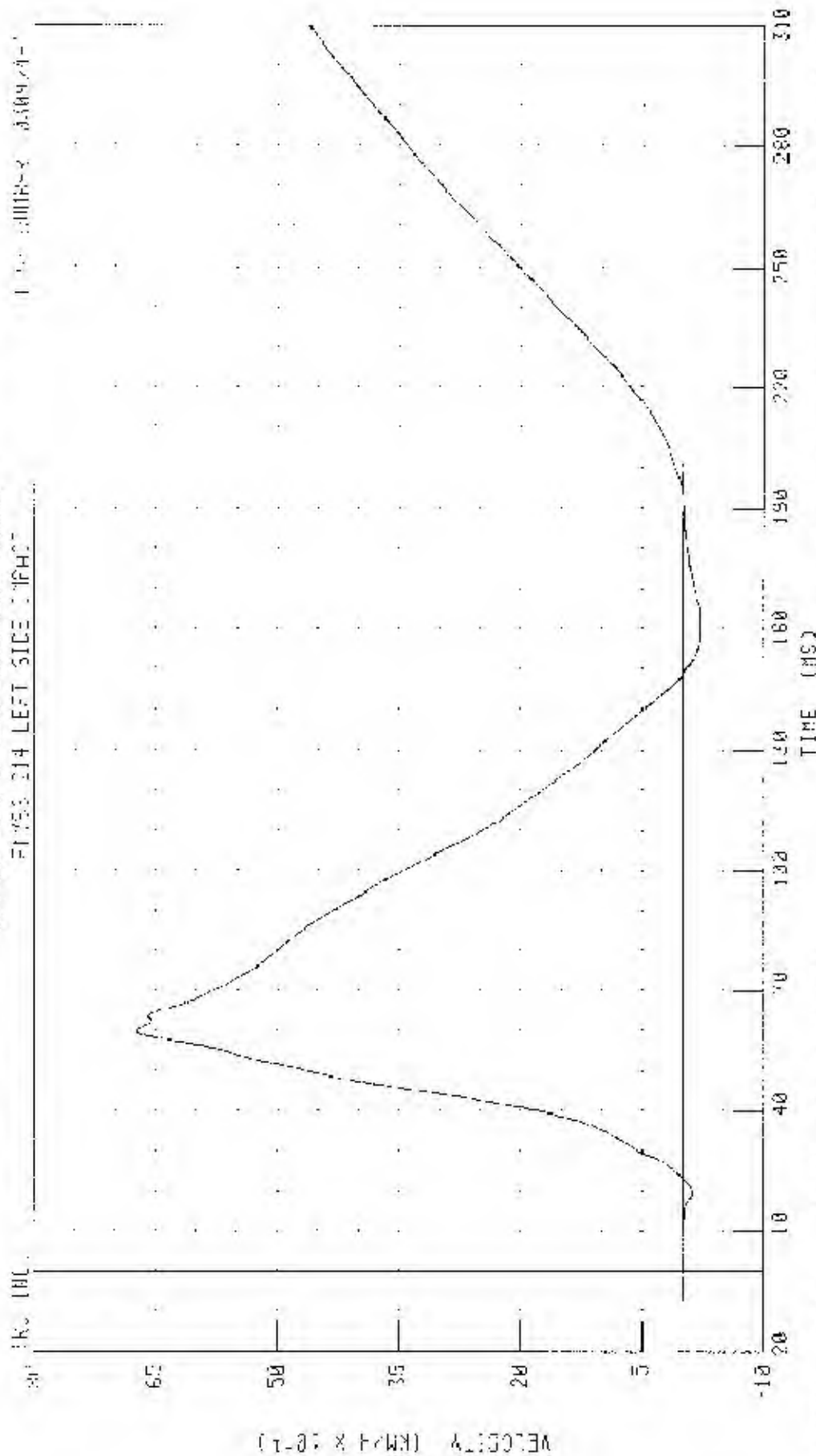
CHANNEL 000780 FILTER CH CLASS 1800

PEAK DATA 10 12 G @ 27 44 MS, 15 45 G @ 65 75 MS

50128 KPH 40' OFF-ROAD SIDE HSC-111 DURING DIFFERENTIAL BARRIER INTO LEFT SIDE OF 2001 LEXUS RX330

DRIVER SEAT 2-AXIS RECORDING VELOCITY

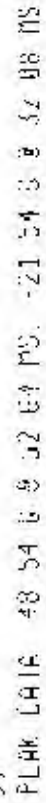
FILE# 214 LEFT SIDE IMPACT



CHANNEL (H02V) FILTER CH 0 ASS 182

PEAK DATA 6.75 KM/H 0.59 G0.10 2.23 K1.11 0.101 50 MS

Т. 260516. МТДМН 1071

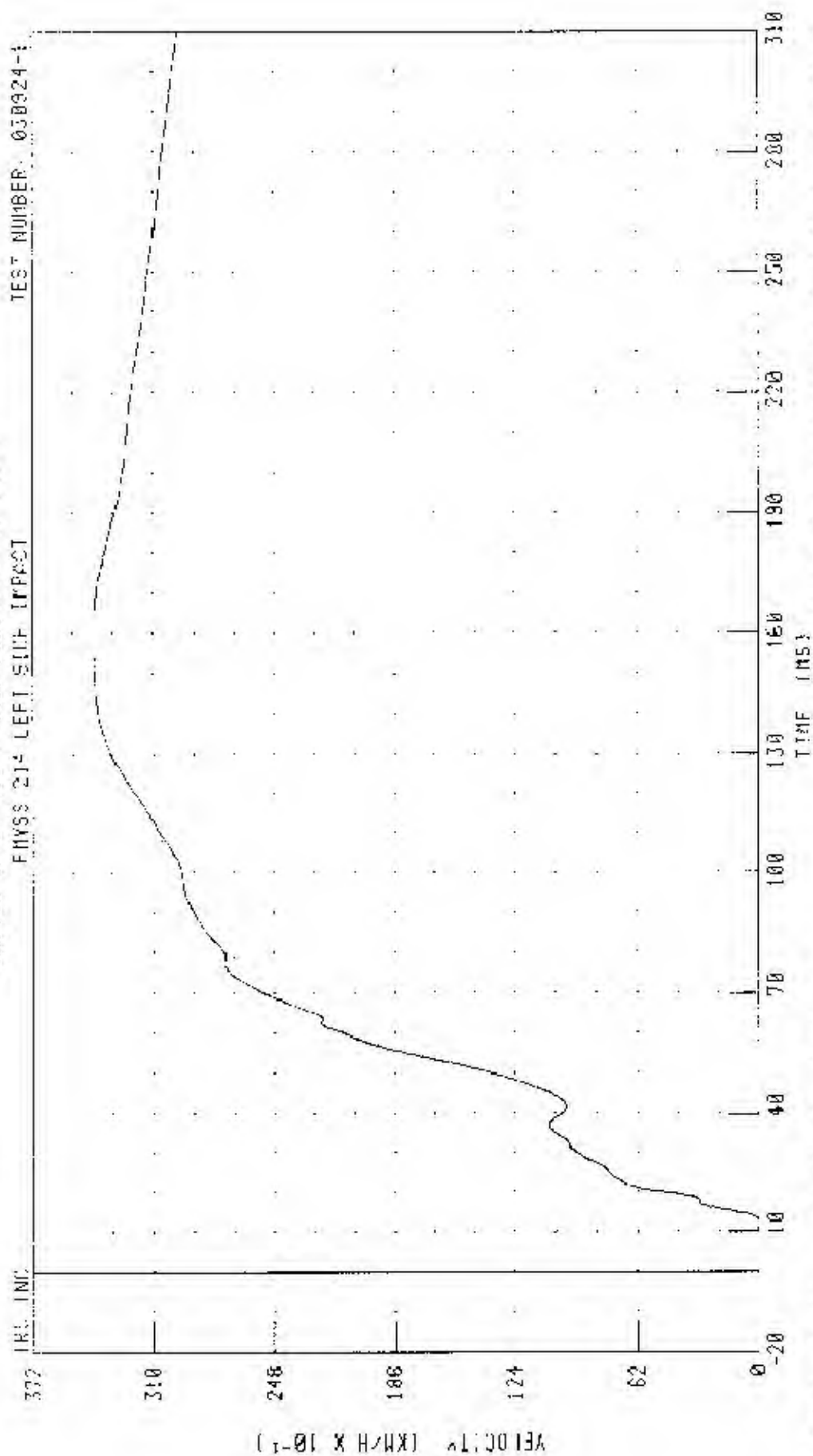


CHANNEL 1 INPUT FILTER CH. 2 LOSS 0.00

55/20 MPH 50 GUNPE SIDE IMPACT (MOVING DEFORMABLE BARRIER) WITH LEFT SIDE OF 2001 LEXUS RX330

DRIVER UPPER LIMB AXIS REDUNDANT VELOCITY

TEST NUMBER: 050924-1



CHANNEL: LURVI FILTER: CH CASE 180

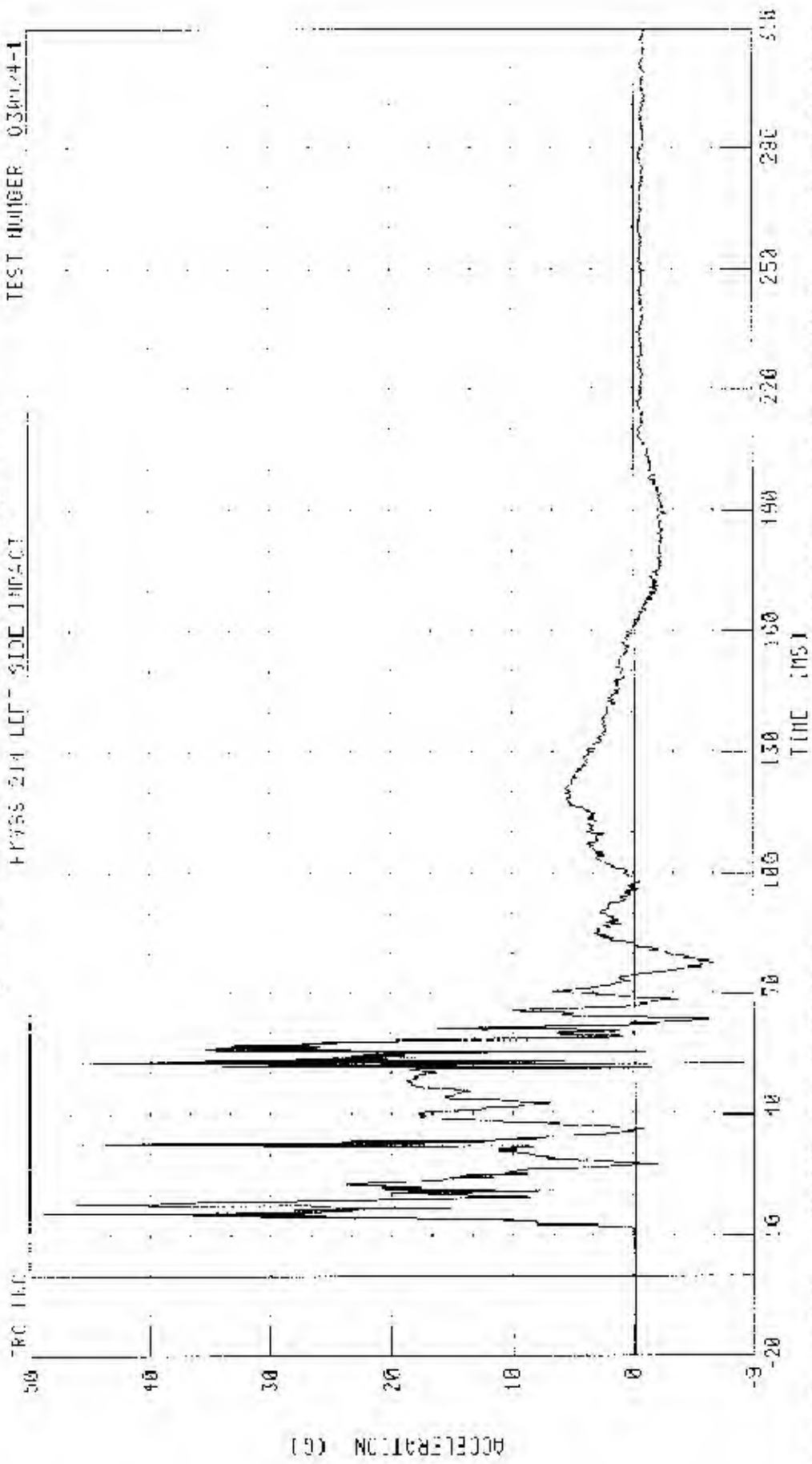
PEAK DATA 34.31 MIN. 162.64 MS. 0.00 KM/H 0.00 MS

35/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

CRASH TESTER R.B. YEAH'S RECURRENT ACCELERATION

FRONT 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



CHANNEL 11424 FILTER CH CLASS 1000

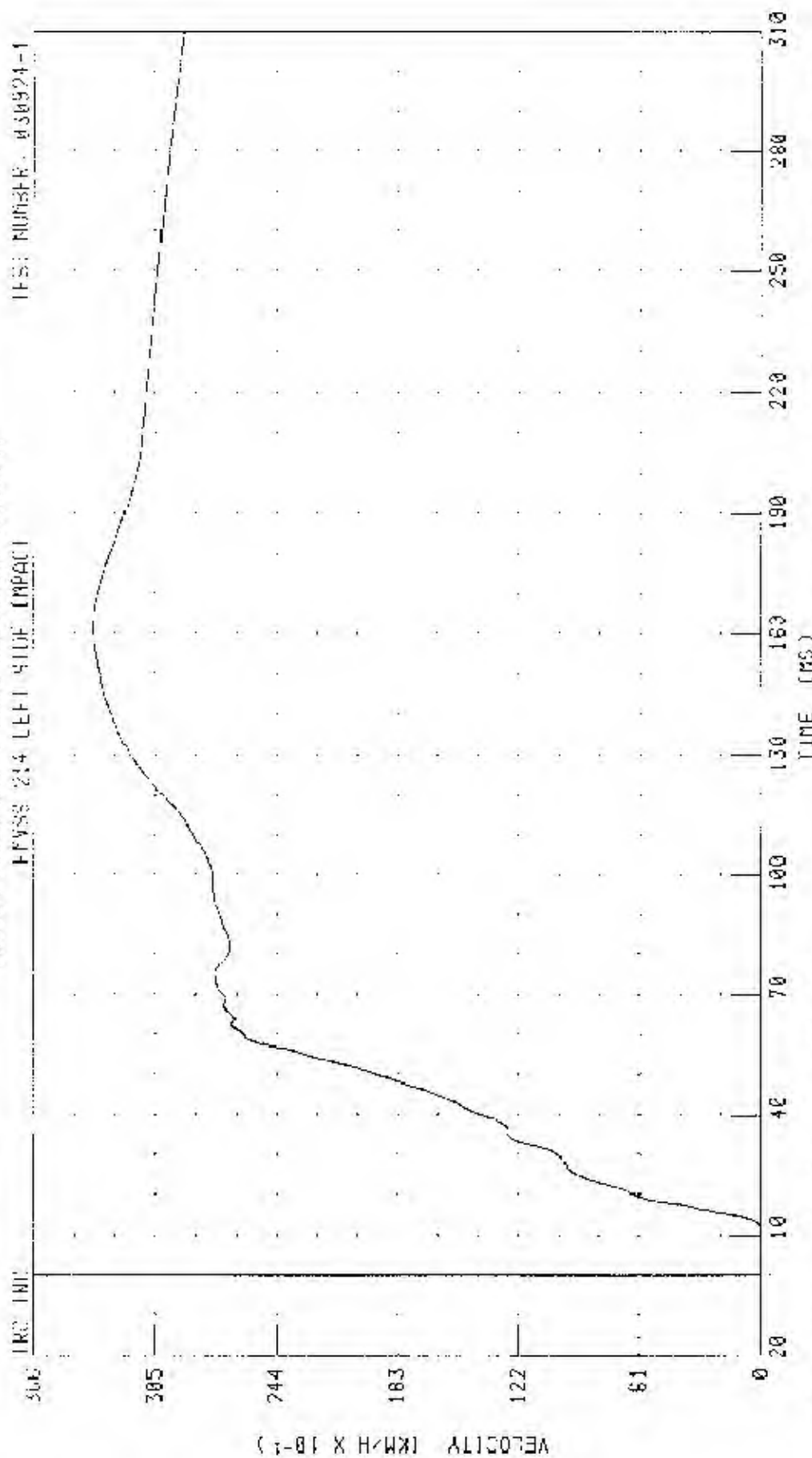
PEAK DATA 40.24 G @ 52.72 MS, 3.84 G @ 57.32 MS

55.28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY

HYSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL LLRYVI FILTER ON CLASE 100

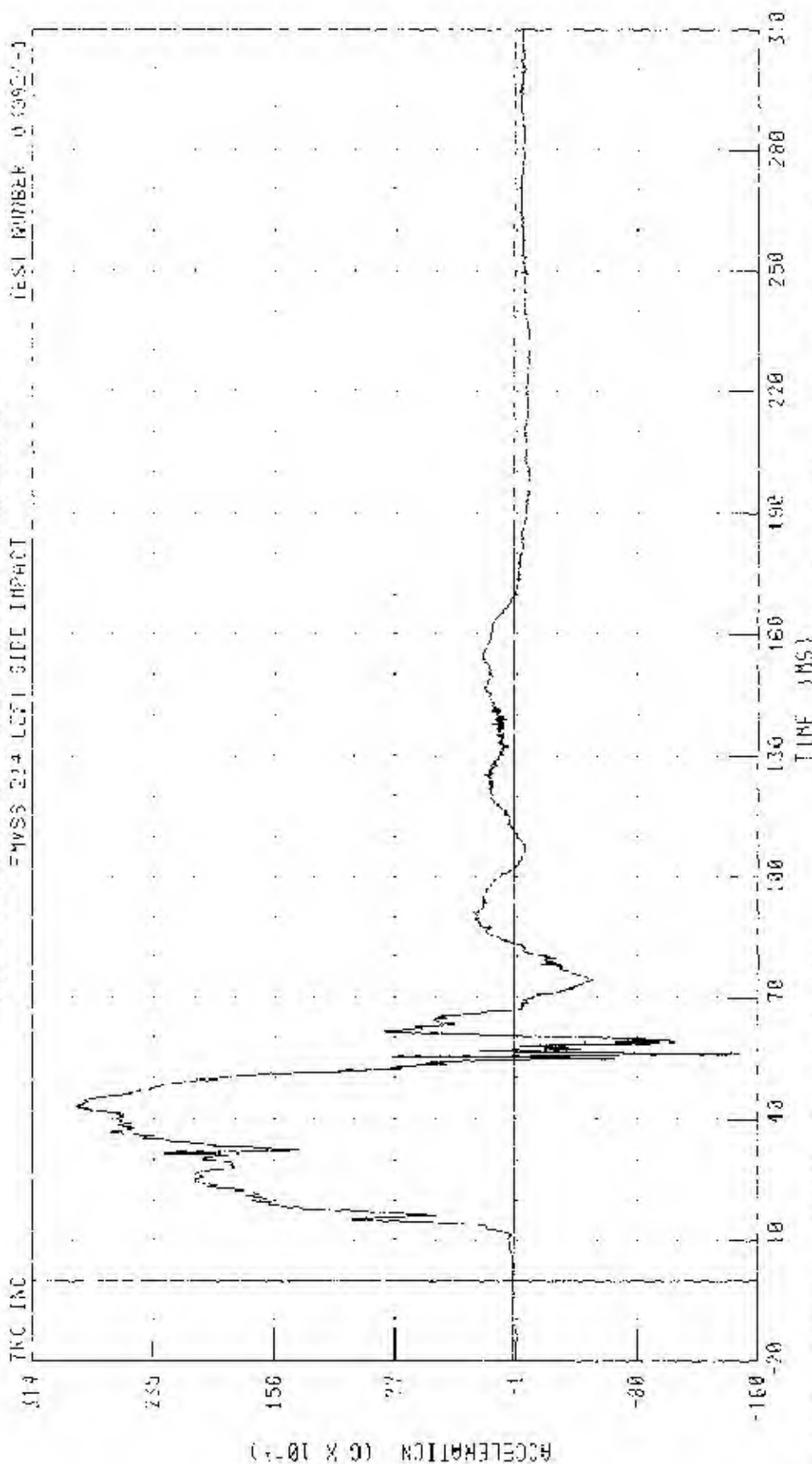
PEAK DATA 33.65 KM/H @ 161.46 MS, 0.00 KM/H @ 0.00 MS

55.28 MPH 30 DEGREE SIDE IMPACT MOVING, DEFORMABLE BARRIER DATE LEFT SIDE OF ROAD EXITS 2X370

DRIVER LOWER SPINE 4-AXIS RECORDING ACCELERATION

TEST NUMBER 00000000

TEST NUMBER 00000000



CHANNEL 117YR1 FILTER ON CLASS 1000

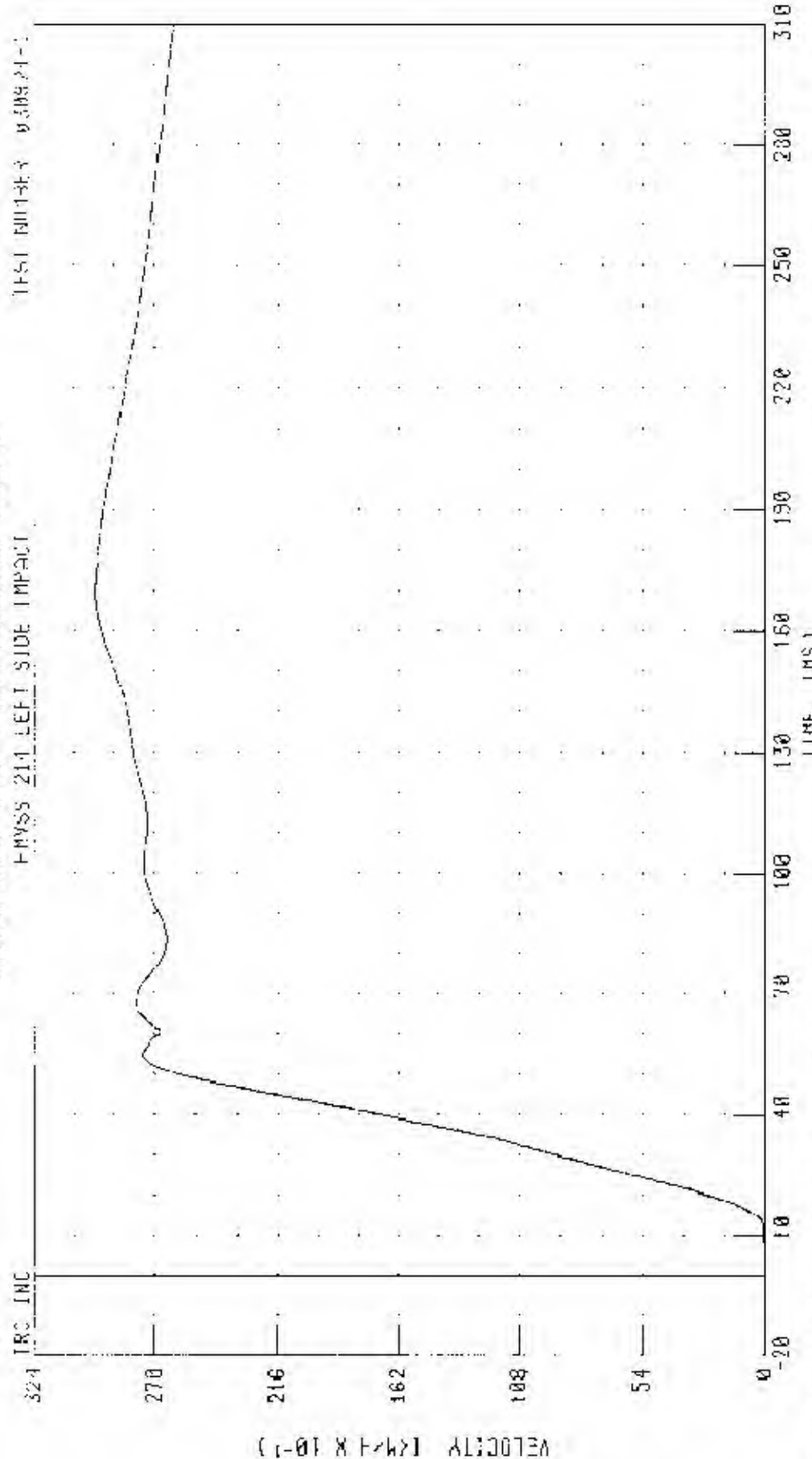
PEAK DATA 28.57 G @ 42.88 MS, -14.75 G @ 15.32 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1

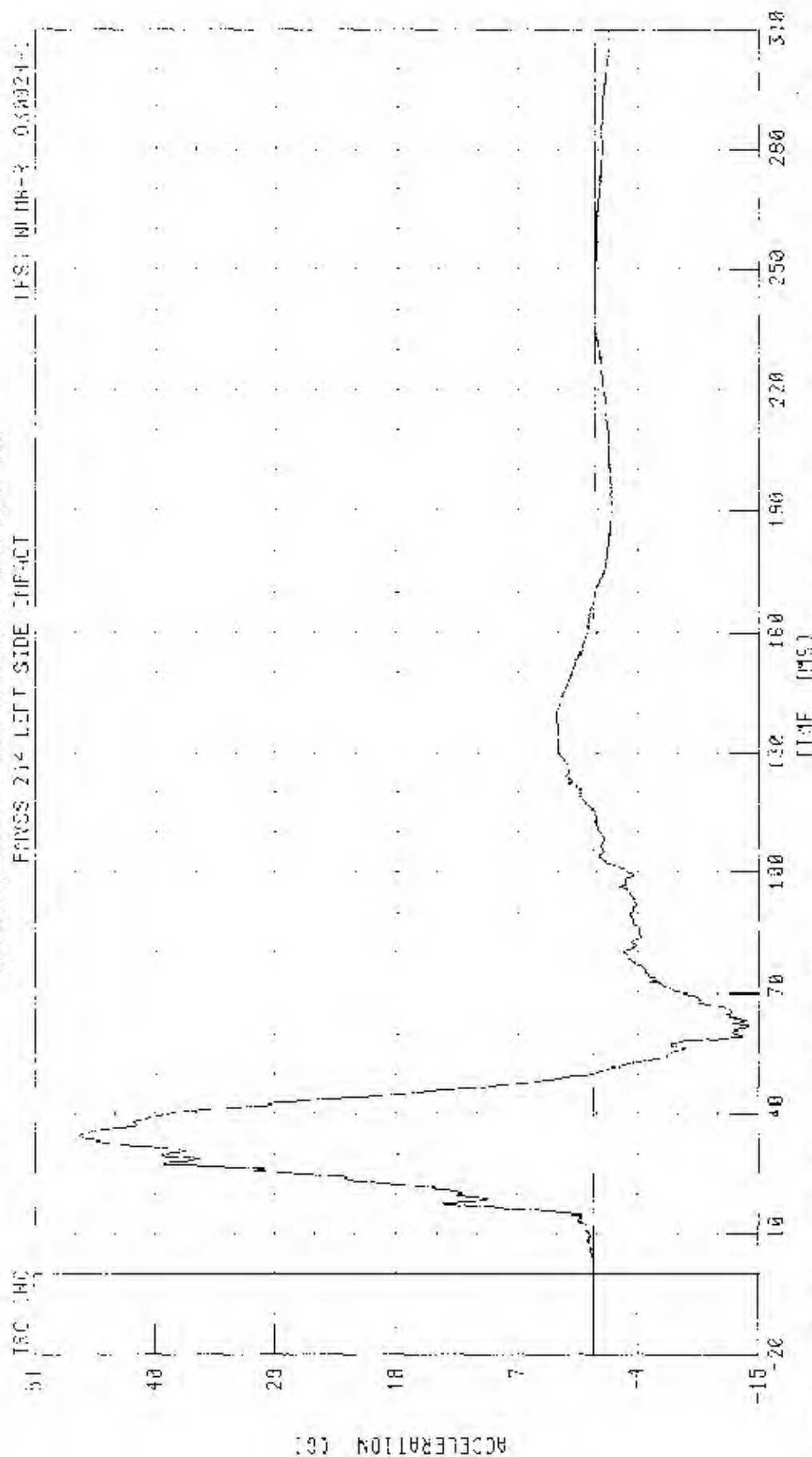


CHANNEL 112YVI FILTER: CH CLASS 180

PEAK DATA 29.65 KM/H @ 100.00 MS, 0.00 KM/H @ 0.00 MS

00028 KPS 50 DEGREE STIFF IMPACT (MOVING DEFENDABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PELVIS 3-4MS RECORDANT ACCELERATION



CHANNEL PEYR1 FILTER CH CLASS 1000

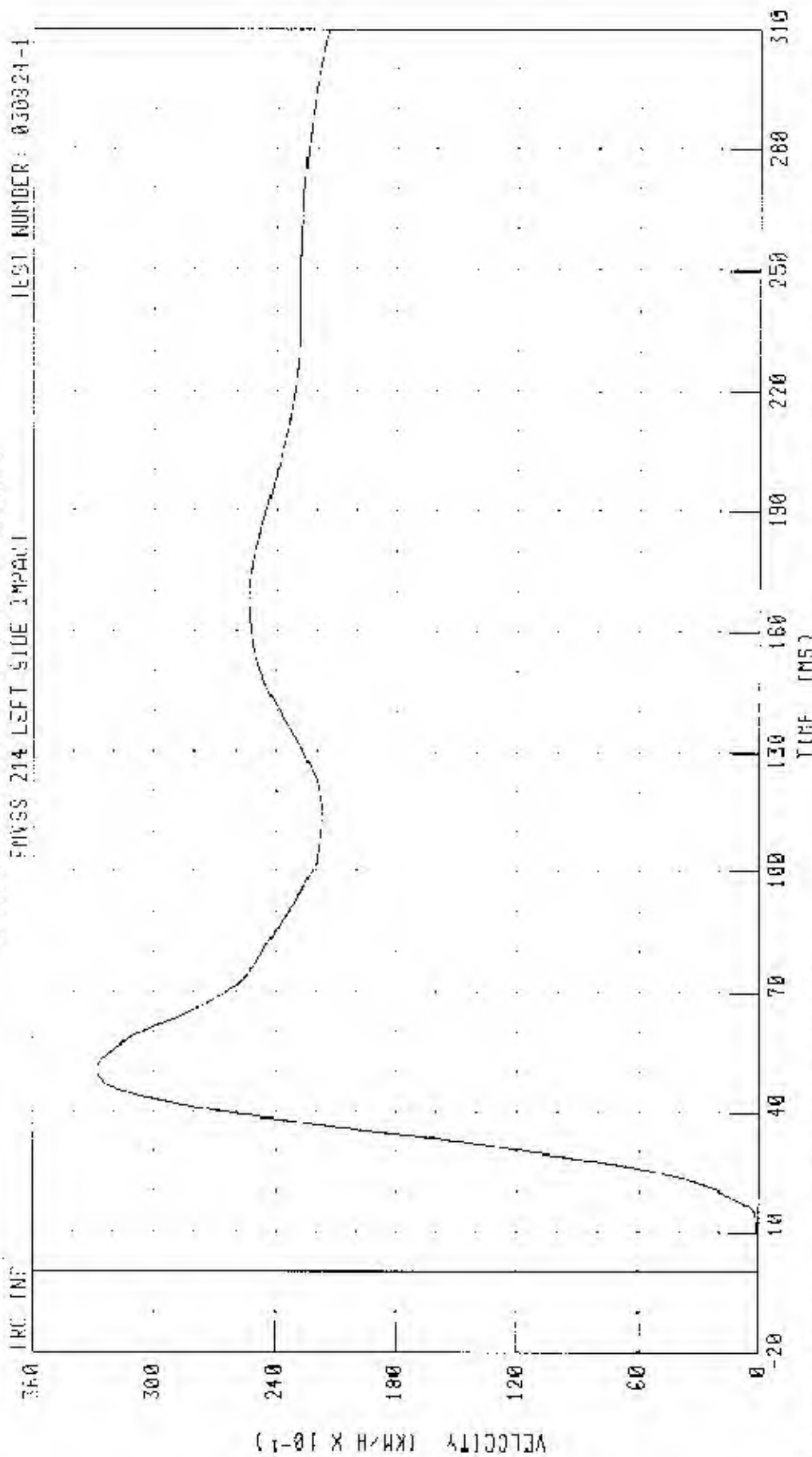
P50K 0074 46 00 00 34 84 MS. -14 17 00 51.04 NO

55/25 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PELVIS Y-AXIS DOMINANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030324-1

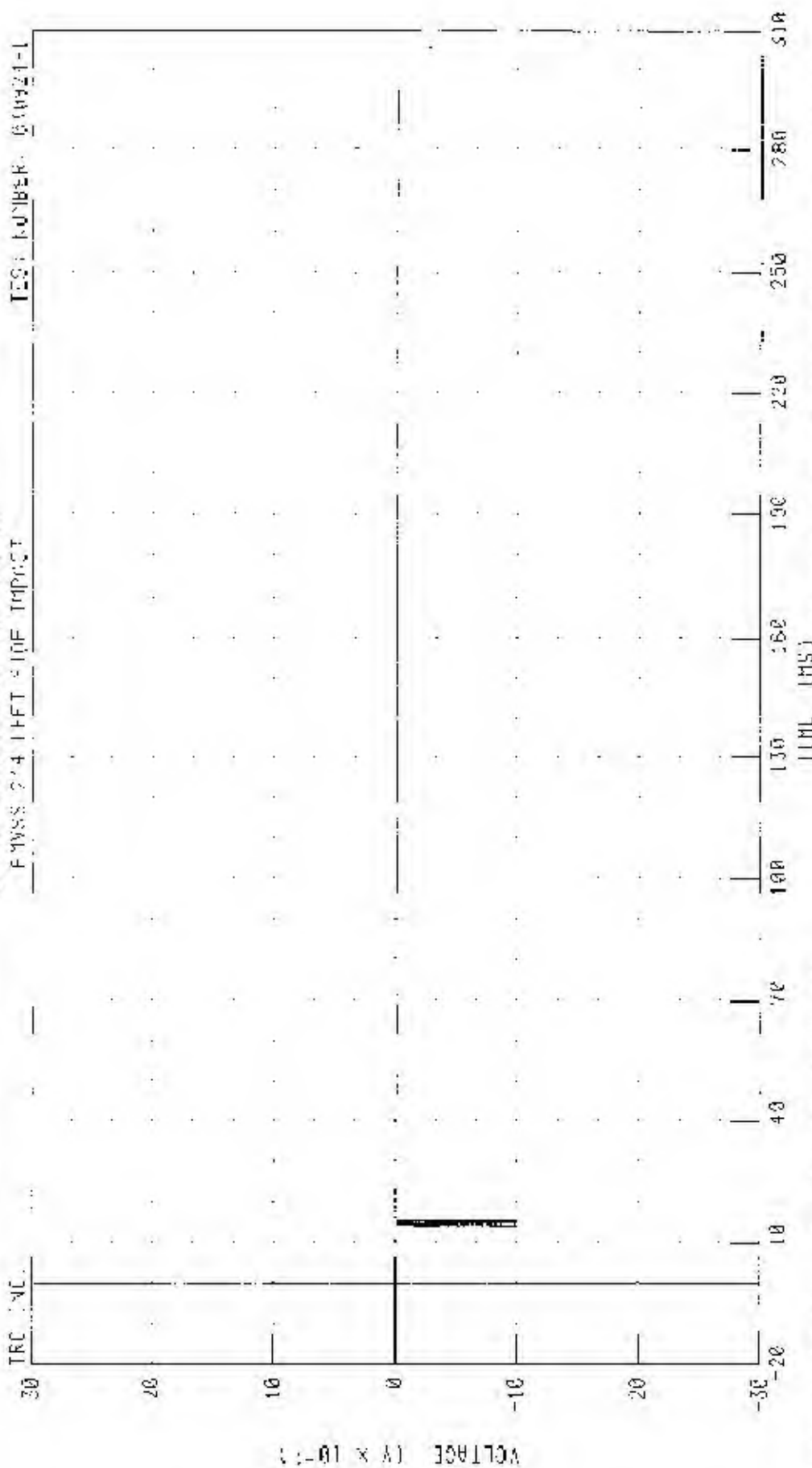


CHANNEL PEVYYI FILTER CH CLASS 100

PEAK DATA: 32.83 KM/H @ 50.32 MS, 0.20 KM/H @ 0.00 MS

55728 MPH 30 BEFORE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 FORDUS EX333

DRIVER SHOULDER CONTACT SWITCH



PRINTED: SHEET 1 FILTER CH CLASS 1300

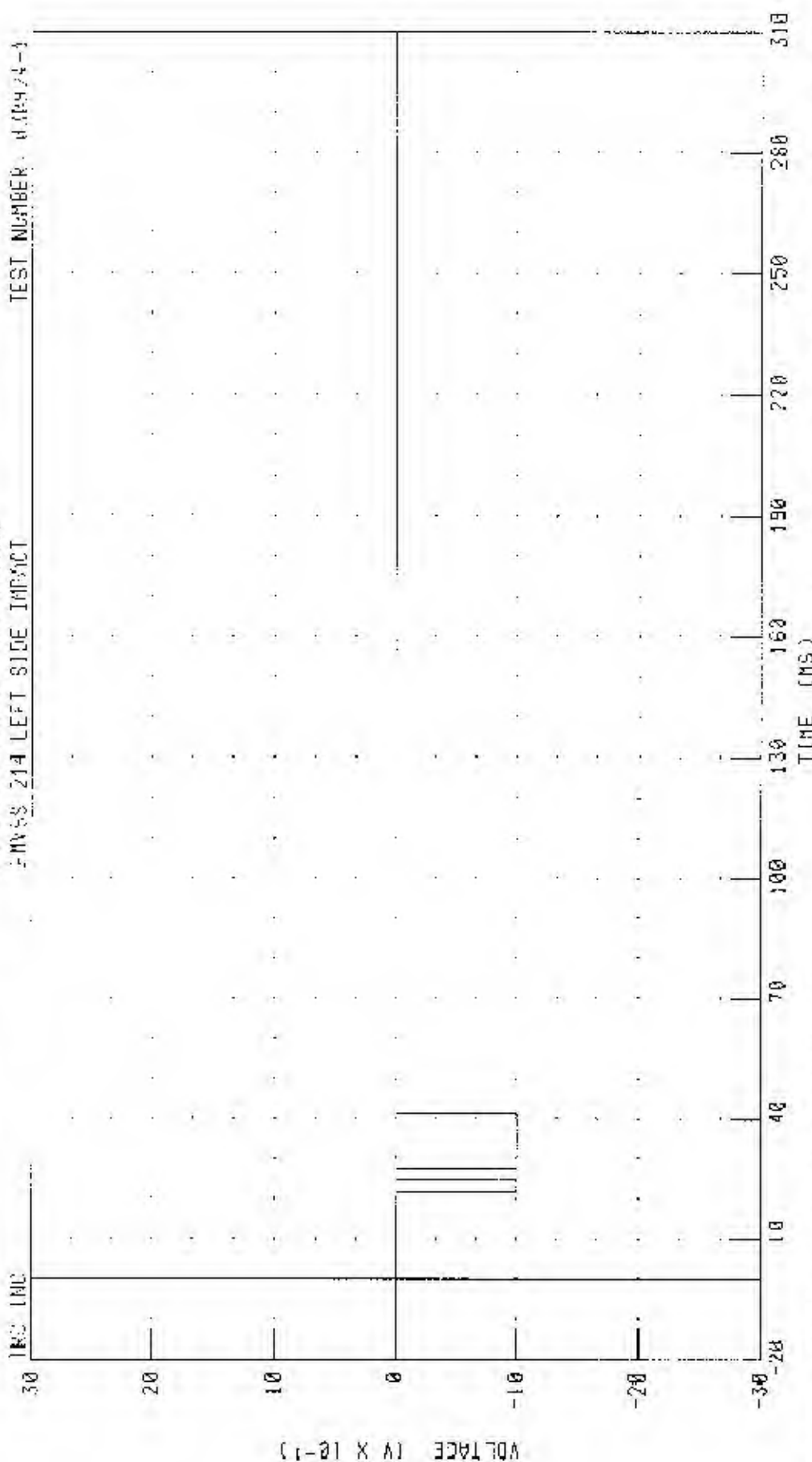
PEAK DATA: 0.00 V @ 310.00 MS, -1.20 V @ 14.74 MS

55-28 KPV 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER PEDESTAL CONTACT SWITCH

PNVS 214 LEFT SIDE IMPACT

TEST NUMBER: 410474-3

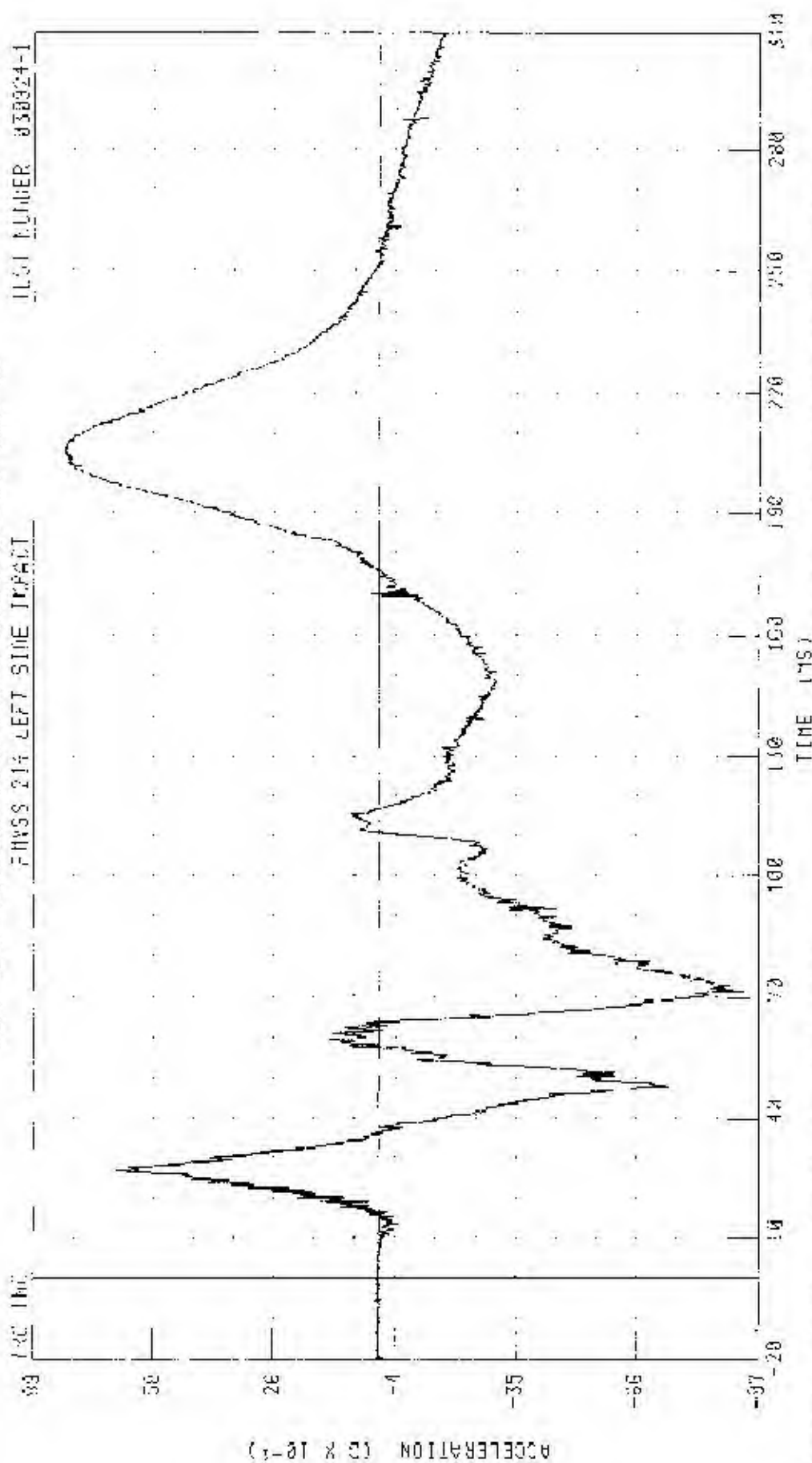


CHANNEL PEVET1 FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS, -1.00 V @ 21.92 MS

55-28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARREL INTO LEFT SIDE OF 1004 IF 8% EXSSO

LEFT REAR PASSENGER HEAD X AXIS REDUNDANT ALTA PRATION



CHANNEL H=EXR4 FILTER CII CLASS 1800

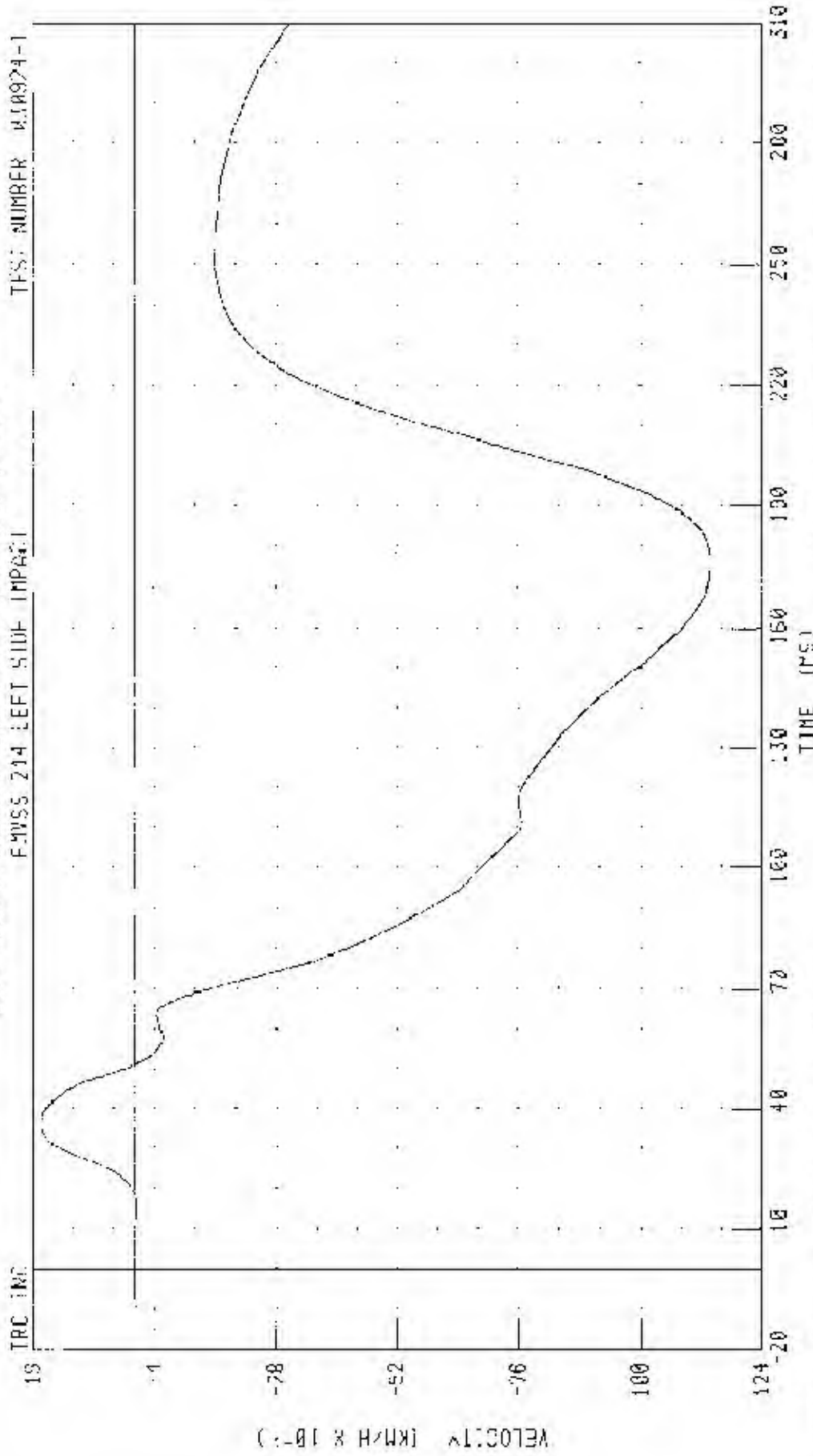
TIME (MS) 0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 4100 4200 4300 4400 4500 4600 4700 4800 4900 5000 5100 5200 5300 5400 5500 5600 5700 5800 5900 6000 6100 6200 6300 6400 6500 6600 6700 6800 6900 7000 7100 7200 7300 7400 7500 7600 7700 7800 7900 8000 8100 8200 8300 8400 8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900 10000

55/2R KFH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2404 LF BUS 2X500

LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER K10924-1



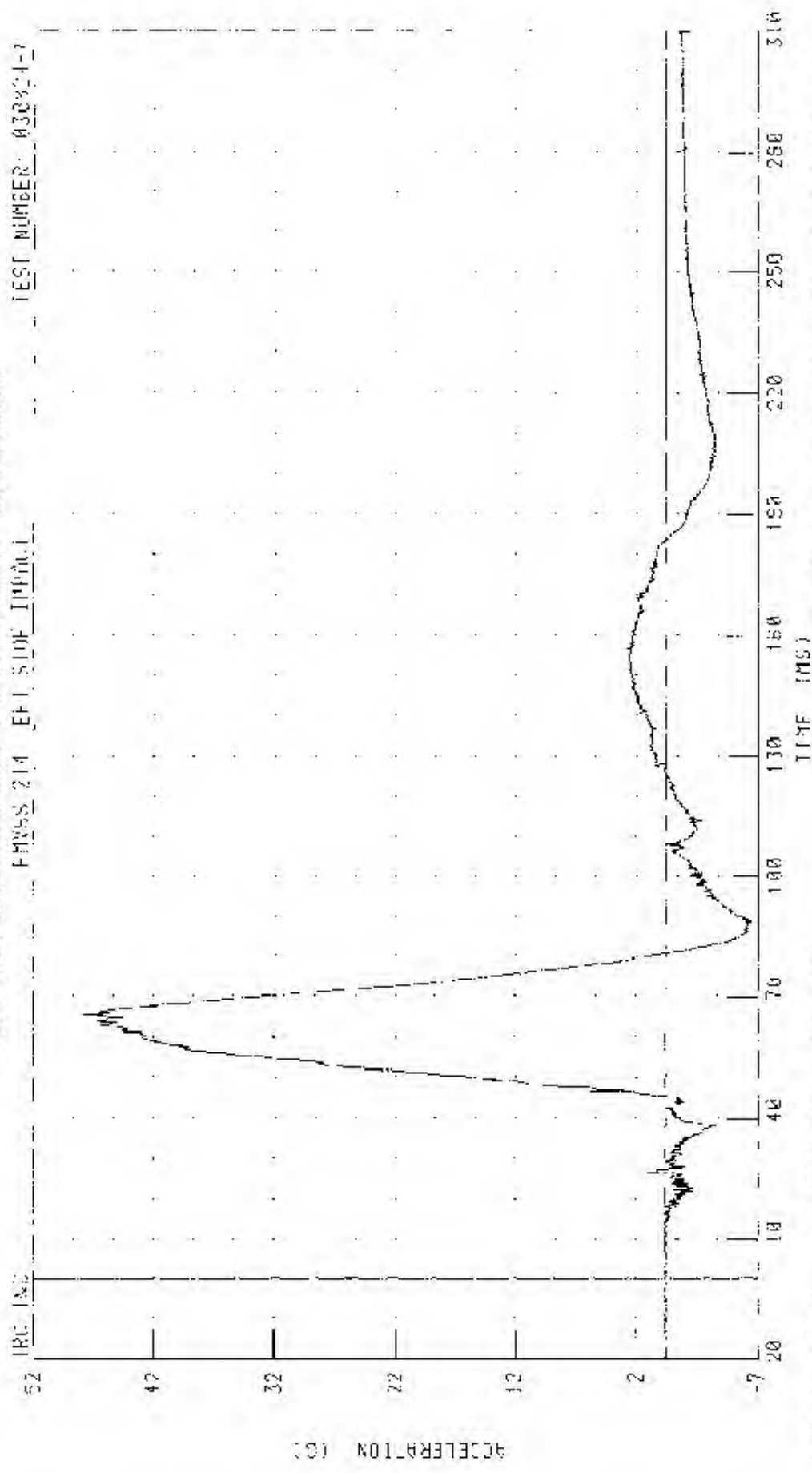
CHANNEL HEDXVJ FILTER 011 CLASS 100

PEAK DATA 1 83 KM/H @ 30 32 MS 11 42 KM/H @ 175 92 MS

55/20 KPH 00 DEGRATE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 FORD EX34

TEST RING PROSECUTOR HEAD Y AXIS REINFORCEMENT ACCELERATION

IRG INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030924-1



CHANNEL: FICLVR4 FILTER: 0H CLASS: 1000

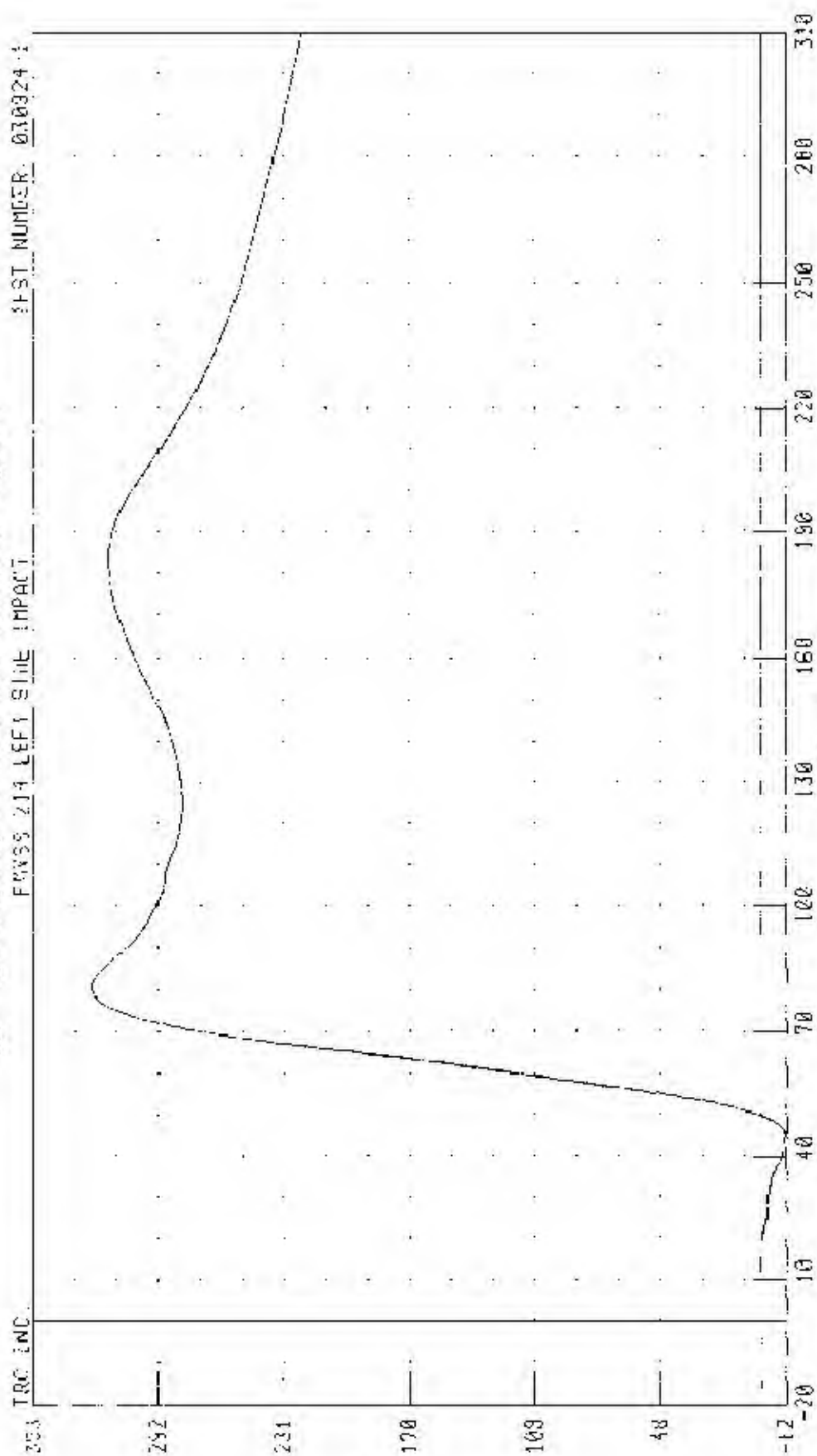
PEAK DATA: 48.21 G @ 75.08 MS, -6.95 G @ 88.10 MS

55.28 KPH 40 DEGREE SIDE IMPACT (MOVING DEFORMABLE BAR) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY

TEST NUMBER: 030924-1

FW35 214 LEFT SIDE IMPACT



VELOCITY (KM/H X 10⁻³)

TIME (MS)

CHANNEL 4EDYUJ FILTER CH CLASS 100

PEAK DATA 32.58 KM/H @ 80.80 MS, 113 KM/H @ 45.17 MS

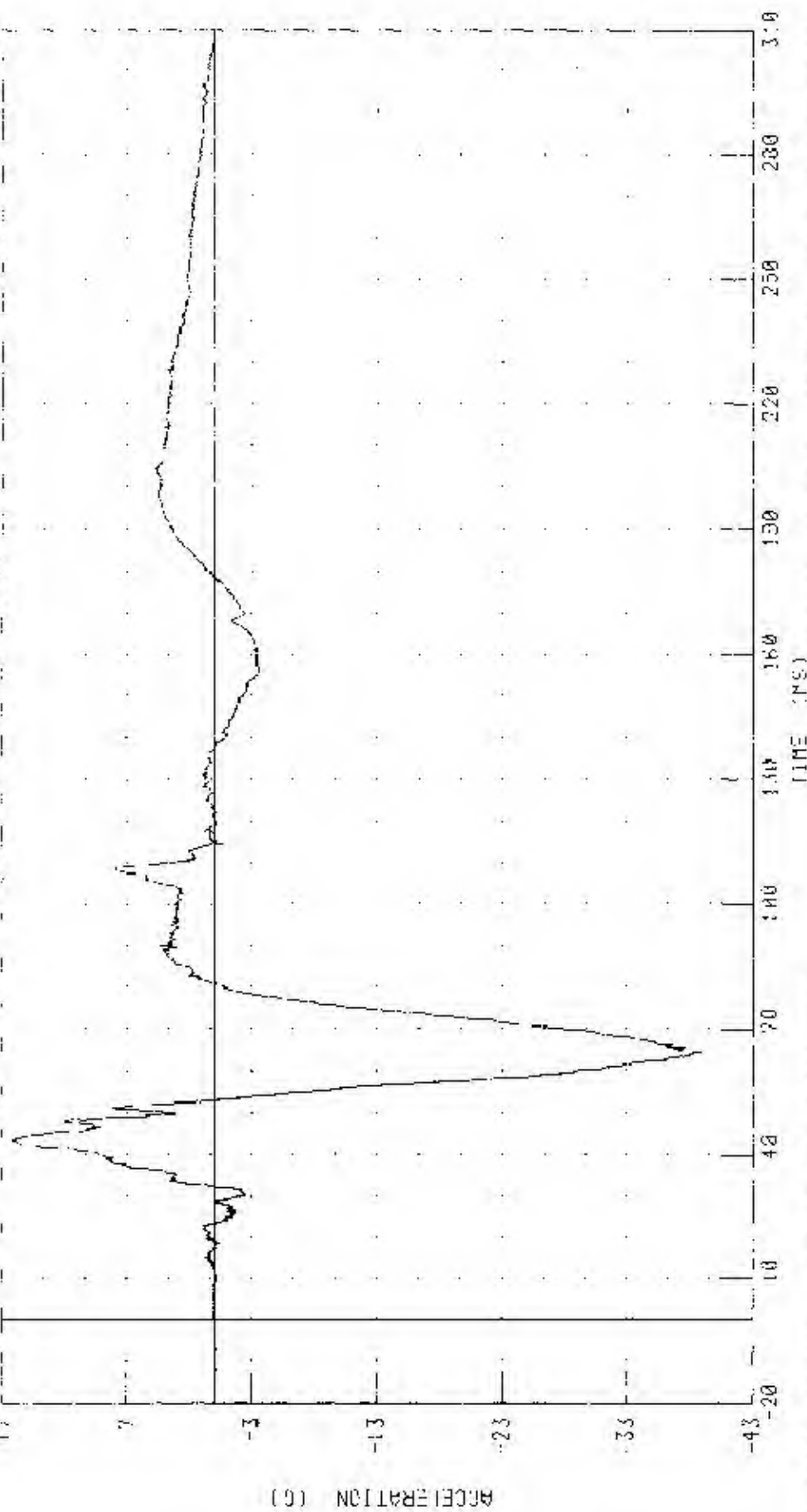
55/28 MPH 90 DEGREE SIDE IMPACT (MVA) AS DEFINABLE BARRIER, N10 LEFT SIDE OF ROAD 19X06 R2330

LEFT REAR PASSENGER HEAD Z-AXIS RECURRENT ACCELERATION

12 IAC INC

FRYSS 214 LEFT SIDE INPUT

IFSI NUMBER 0409024-1



CHANNEL: HLLC7M4 FILTER: CH CLASS 1003

PEAK DATA 16 17 0 43 80 MG, -38 31 0 64.40 MS

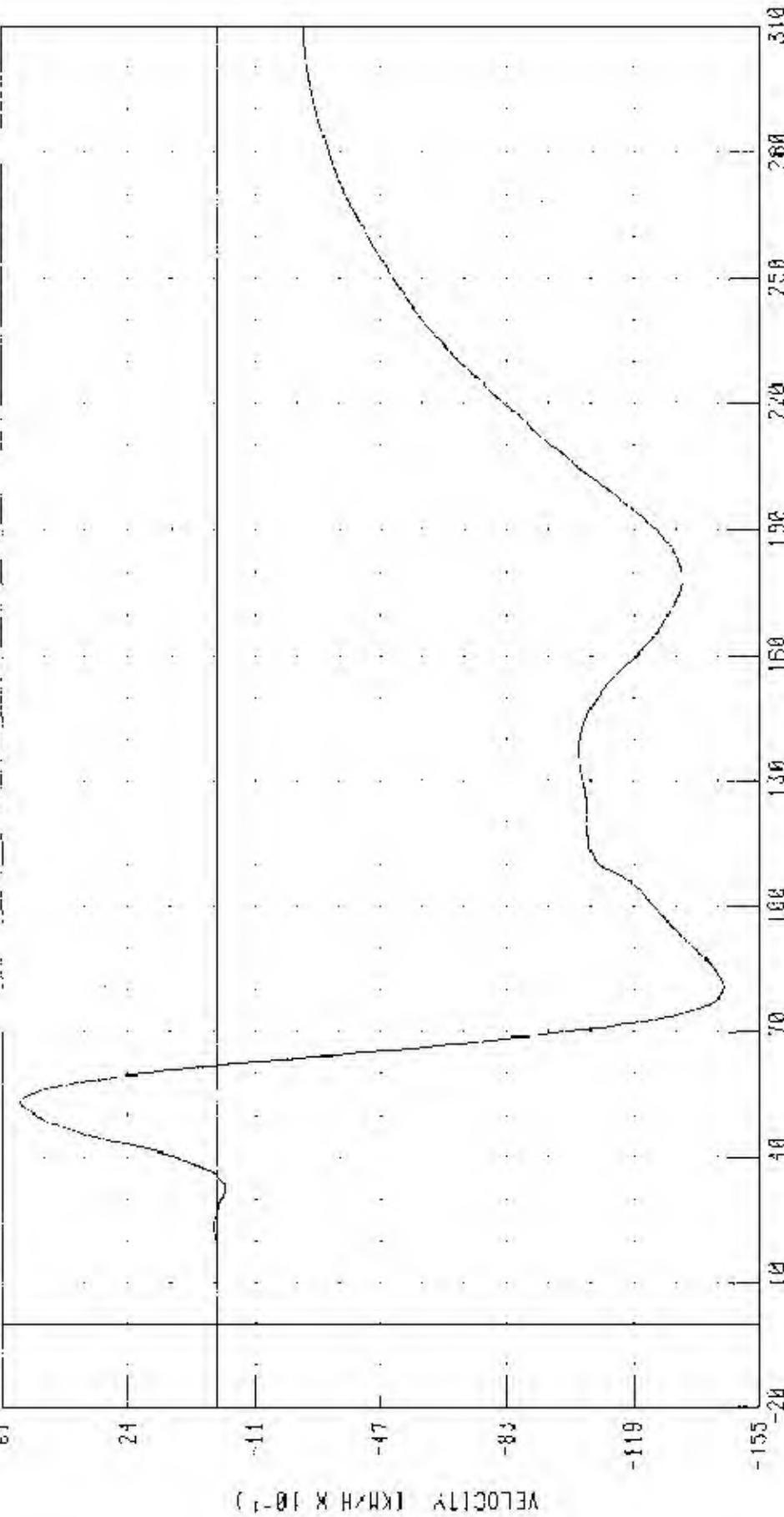
55/23 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER HEAD Z-AXIS REINFORCEMENT VELOCITY

TRC INC

FWSS 21- LEFT SIDE IMPACT

TEST NUMBER 030924-1



LINE (MS)

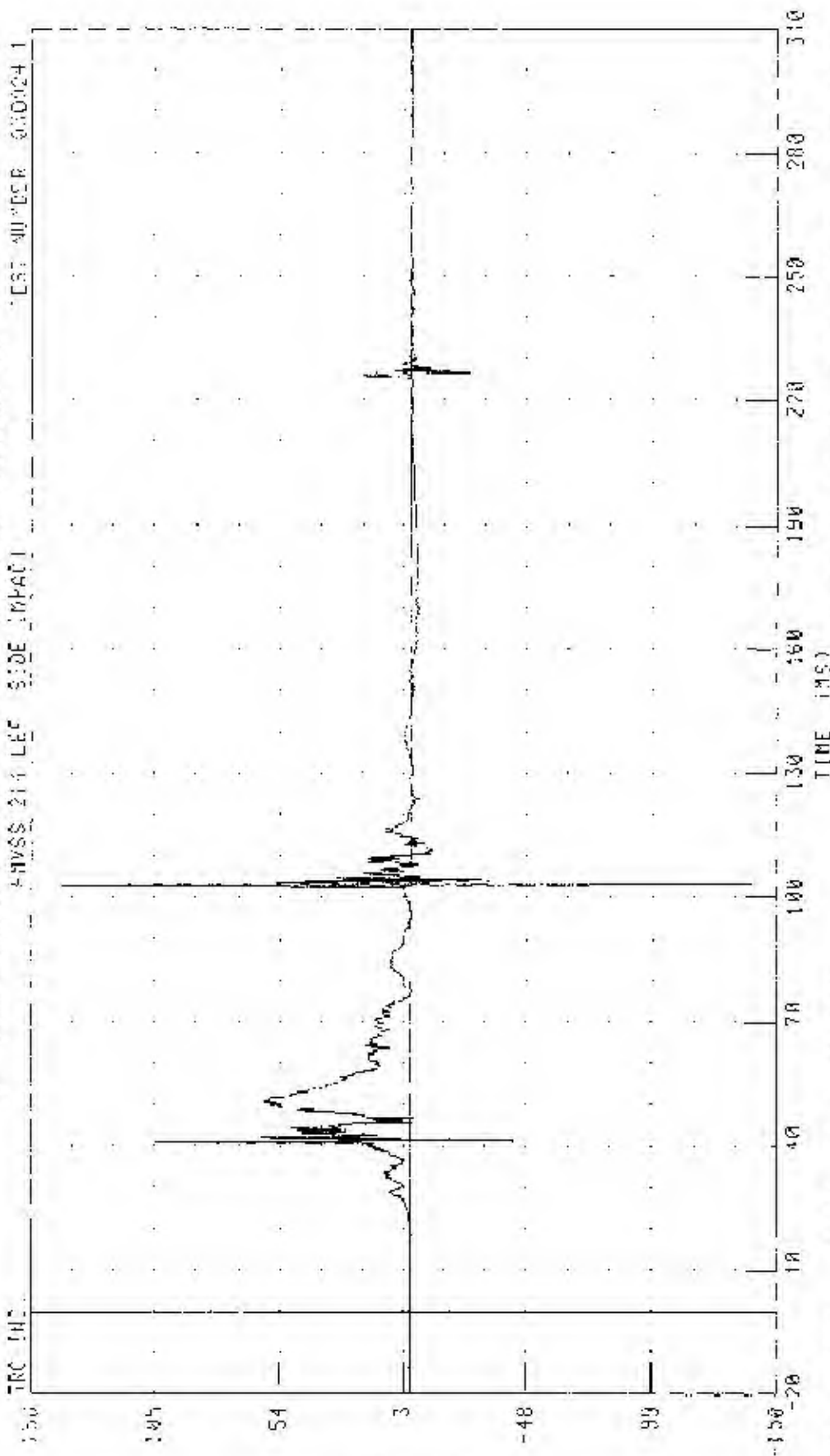
CHANNEL HEADZVJ FILTER CH CLASS 180

PEAK DATA 5 62 KM/H @ 52 96 MS; -13 46 KPH @ 6 80 96 MS

55.28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER UPPER 312 3-AXIS REDUNDANT ACCELERATION

HWSS 214 LEFT SIDE IMPACT EST NUMBER 030924-1

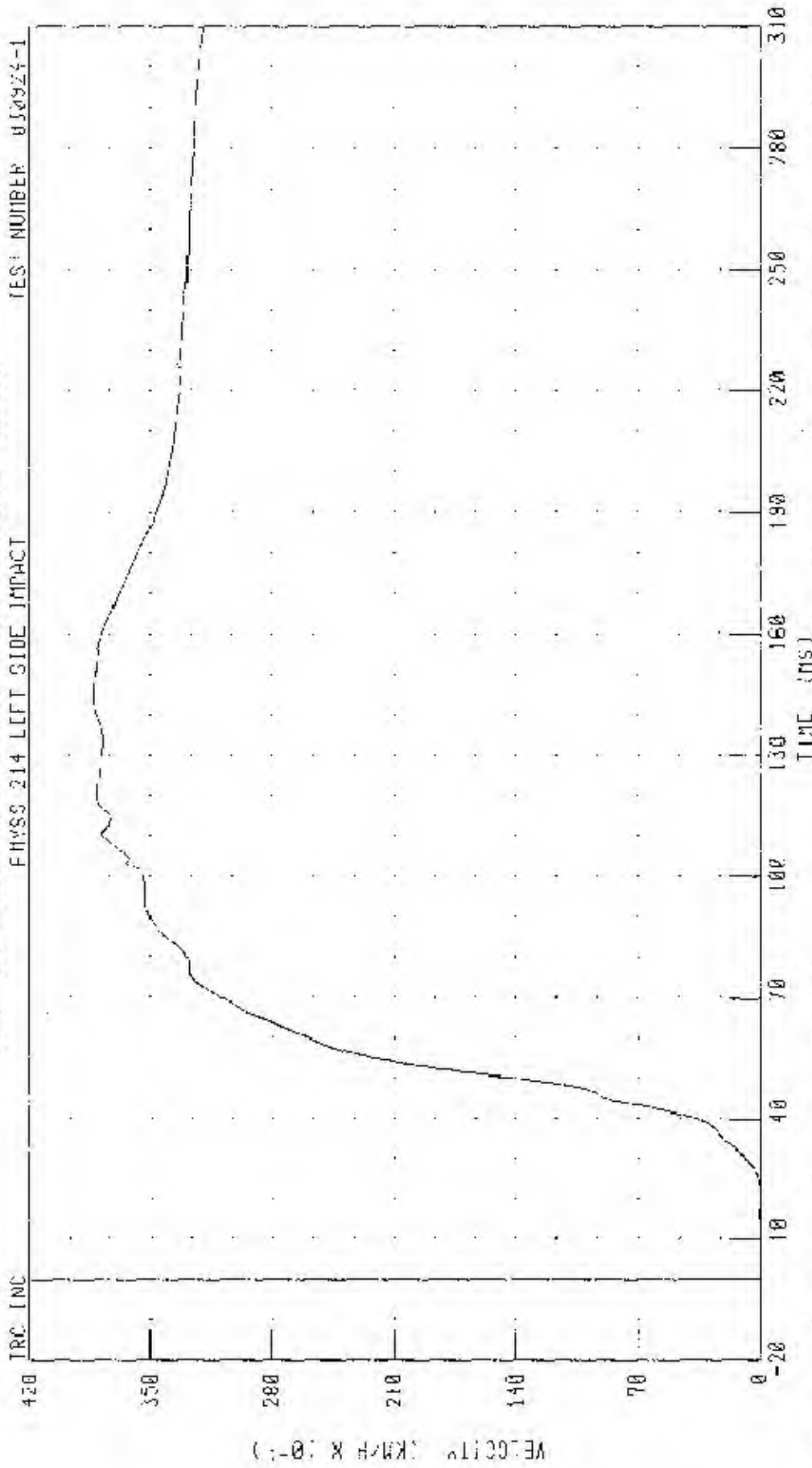


CHANNEL 1 URYR4 FILTER: D-1 CLASS 1000

PEAK DATA: 143.25 G @ 102.95 MS, -140.07 G @ 193.44 MS

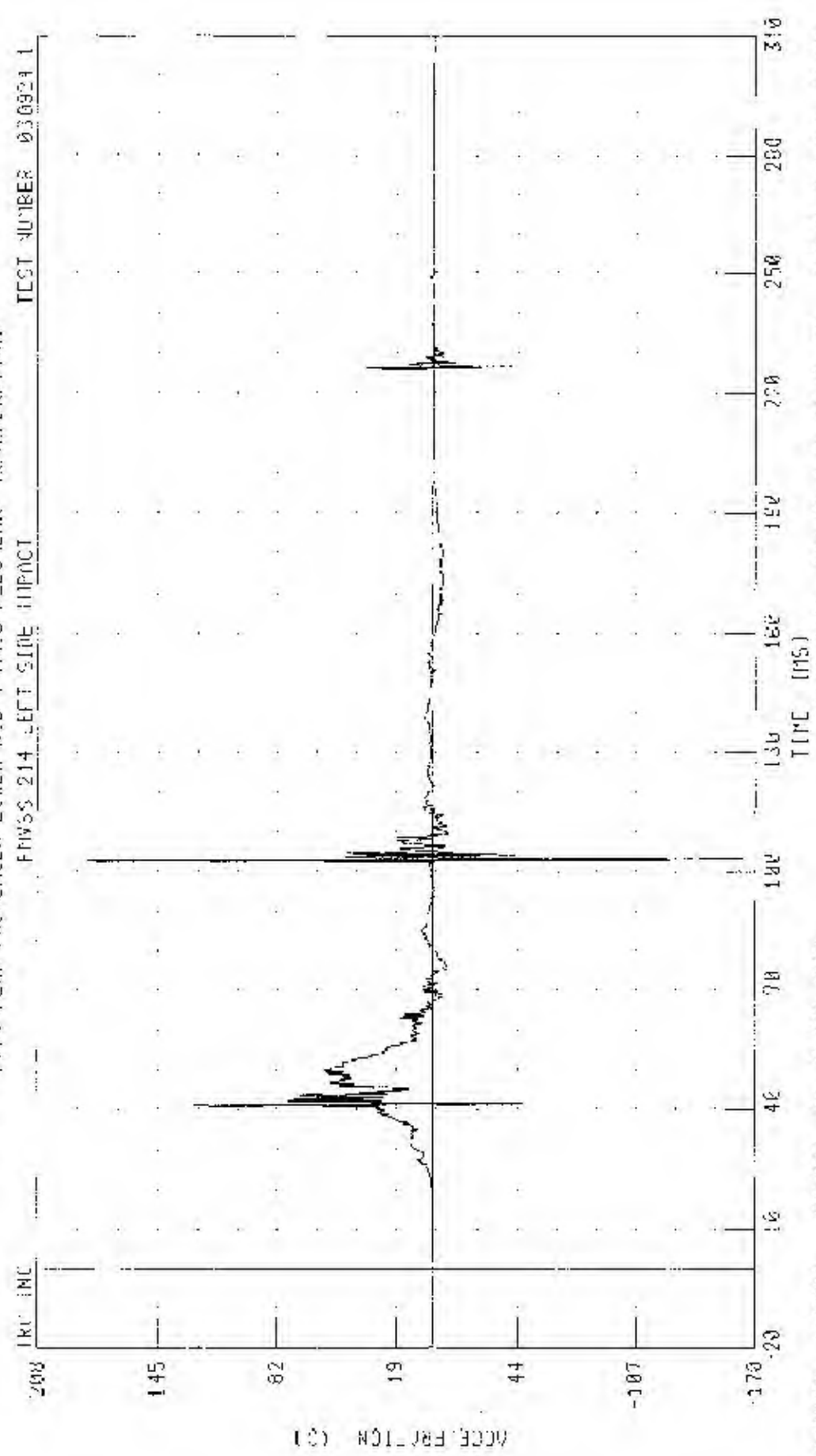
55 MPH KPH 90 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2001 LEXUS RX330

LEFT REAR PASSENGER UPPER RIB Y-AXIS RECURRENT VELOCITY



55728 624 800 FRONT SIDE IMPACT (HIGHLY DEFORMABLE CRUMPLER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER LOWER RIB Y AXIS REDUCED ACCELERATION



TEST NUMBER 030924-1

FWSS 214 LEFT SIDE IMPACT

TIME (MS)

CHANNEL LLRYR4 FILTER CII CLASS 1200

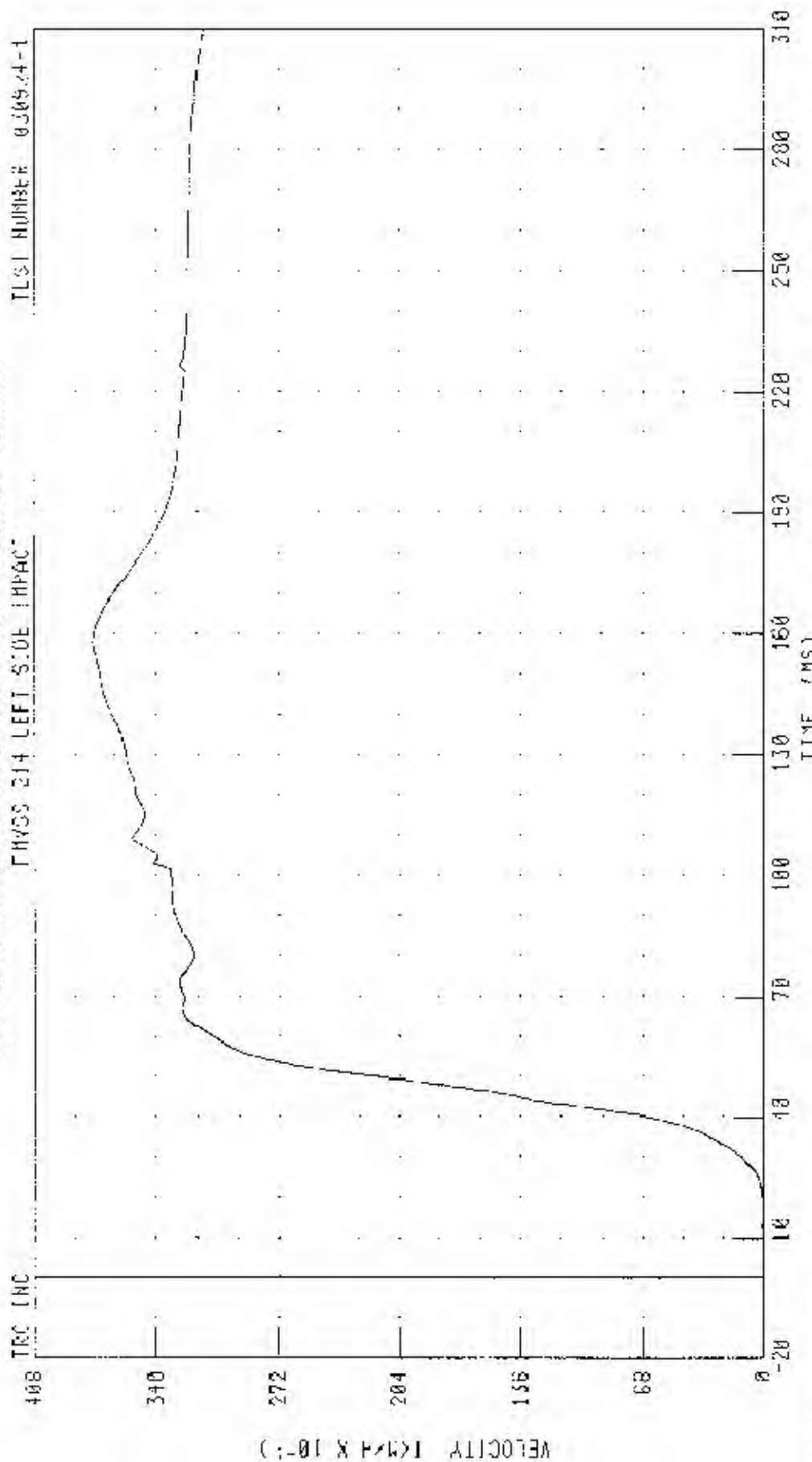
PEAK DATA 187.76 C @ 103.84 MS, 152.90 C @ 103.44 MS

55-20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY

TLSI NUMBER 030924-1

PHYS 214 LEFT SIDE IMPACT



CHANNEL LERYVJ FILTER CH CLASS 180

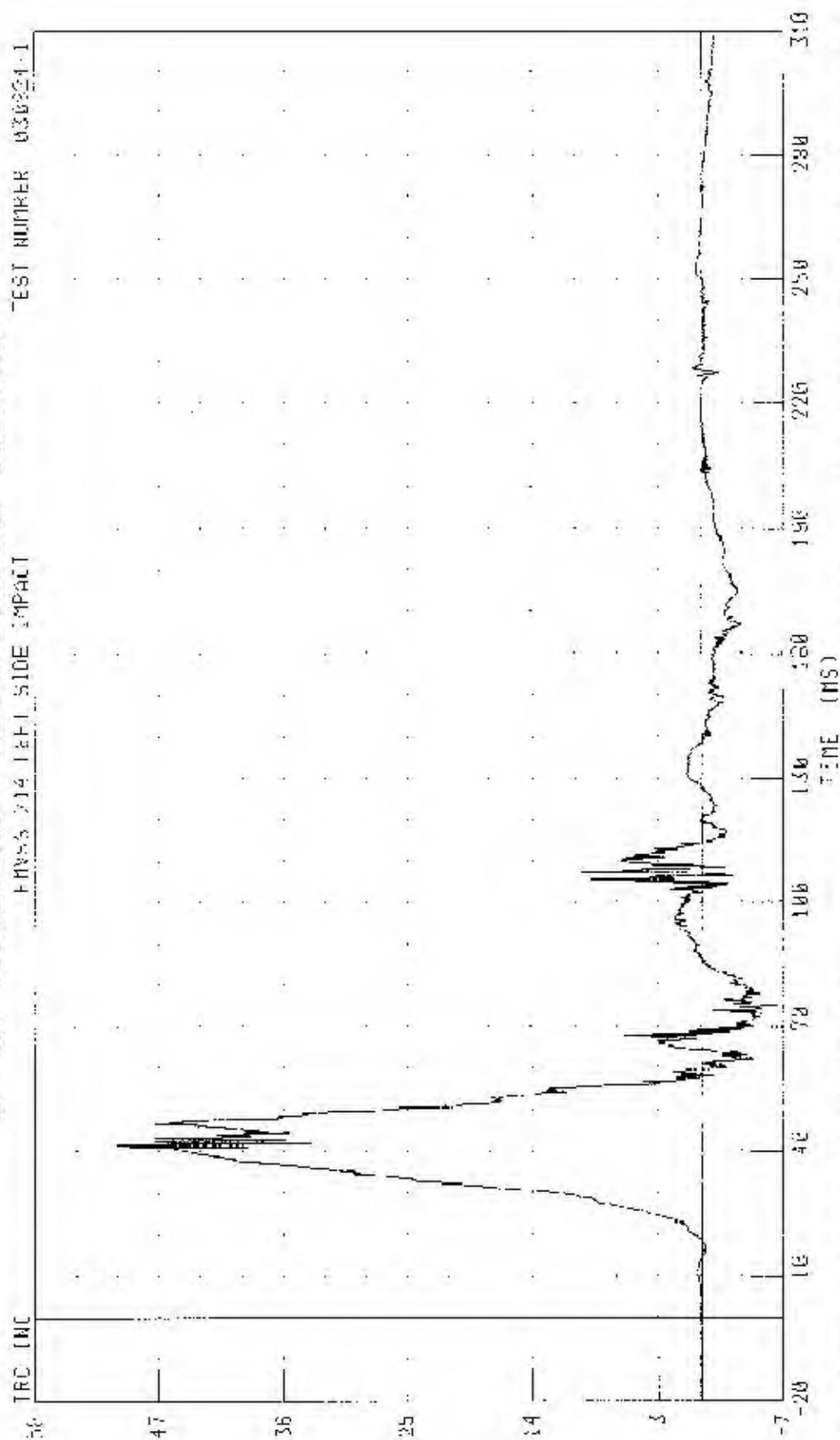
PEAK DATA 37 51 KPH/H @ 138 40 MS, 0 00 KPH/H @ 0 00 MS

55/20 MPH 90 DEGREE SIDE IMPACT MOVING DETONABLE BARRIER INTO LEFT SIDE OF 2004 Lexus RX330

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

PHASE 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



CHANNEL 12VR4 FILTER ON RANGE 1000

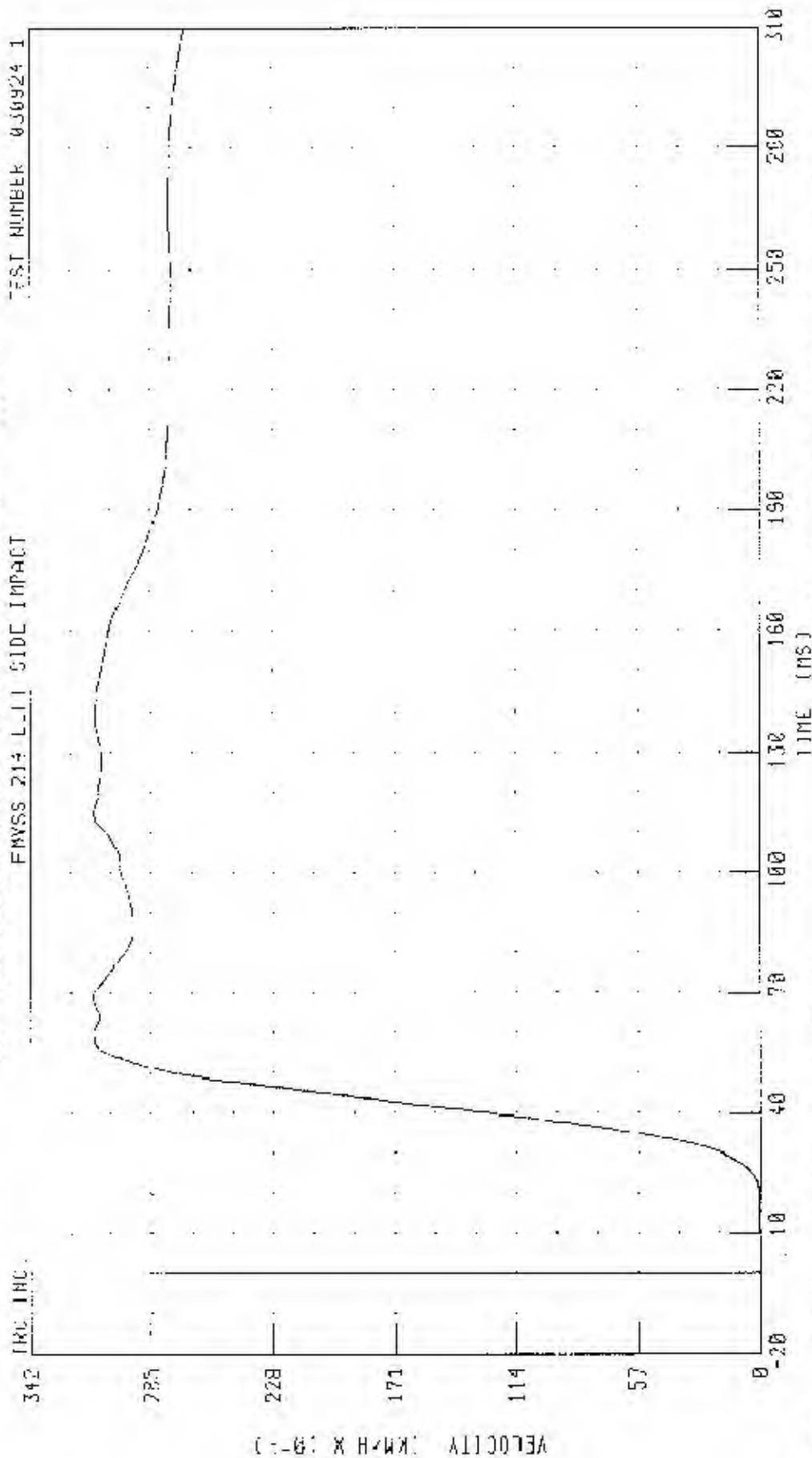
PEAK DATA 54.03 0.3 41.44 MS. 0.03 0.0 55.78 MS

55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

TEST NUMBER 030924 1

FMVSS 214 L-I) SIDE IMPACT



VELOCITY (KM/H X 10⁻¹)

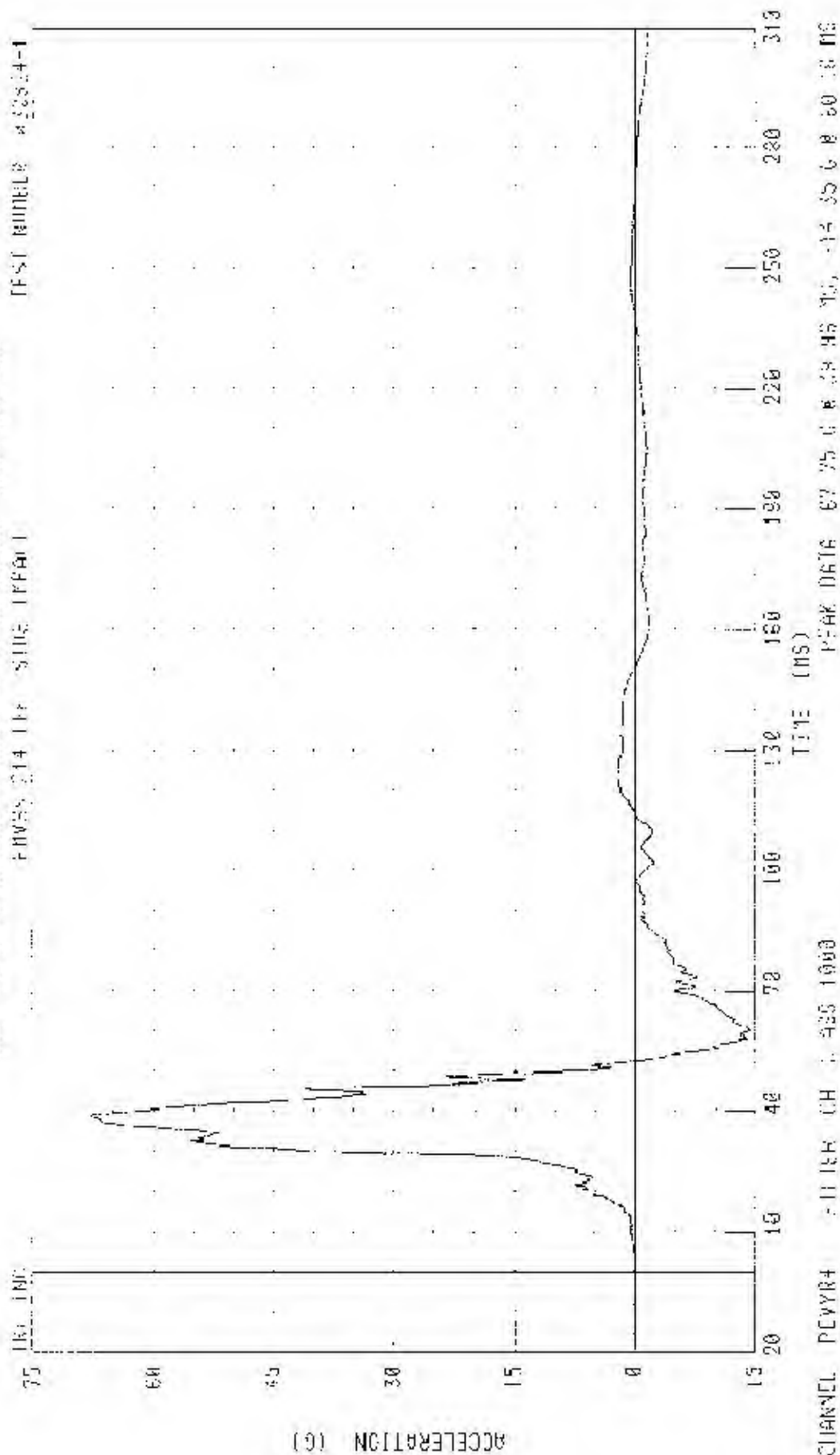
TIME (MS)

CHANNEL 1:20VJ FILTER CH CLASS 180

PEAK DATA: 31 29 KM/H @ 68 96 MS, 0 00 KM/H @ 0 00 MS

55.22 KPH CRASH TEST (MOVING DEFORMABLE BARrier) INTO LEFT SIDE OF 2004 LEXUS RX330H

LEFT REAR PASSENGER PEDESTAL SEAT'S REAR CRASH TEST SEATBELT



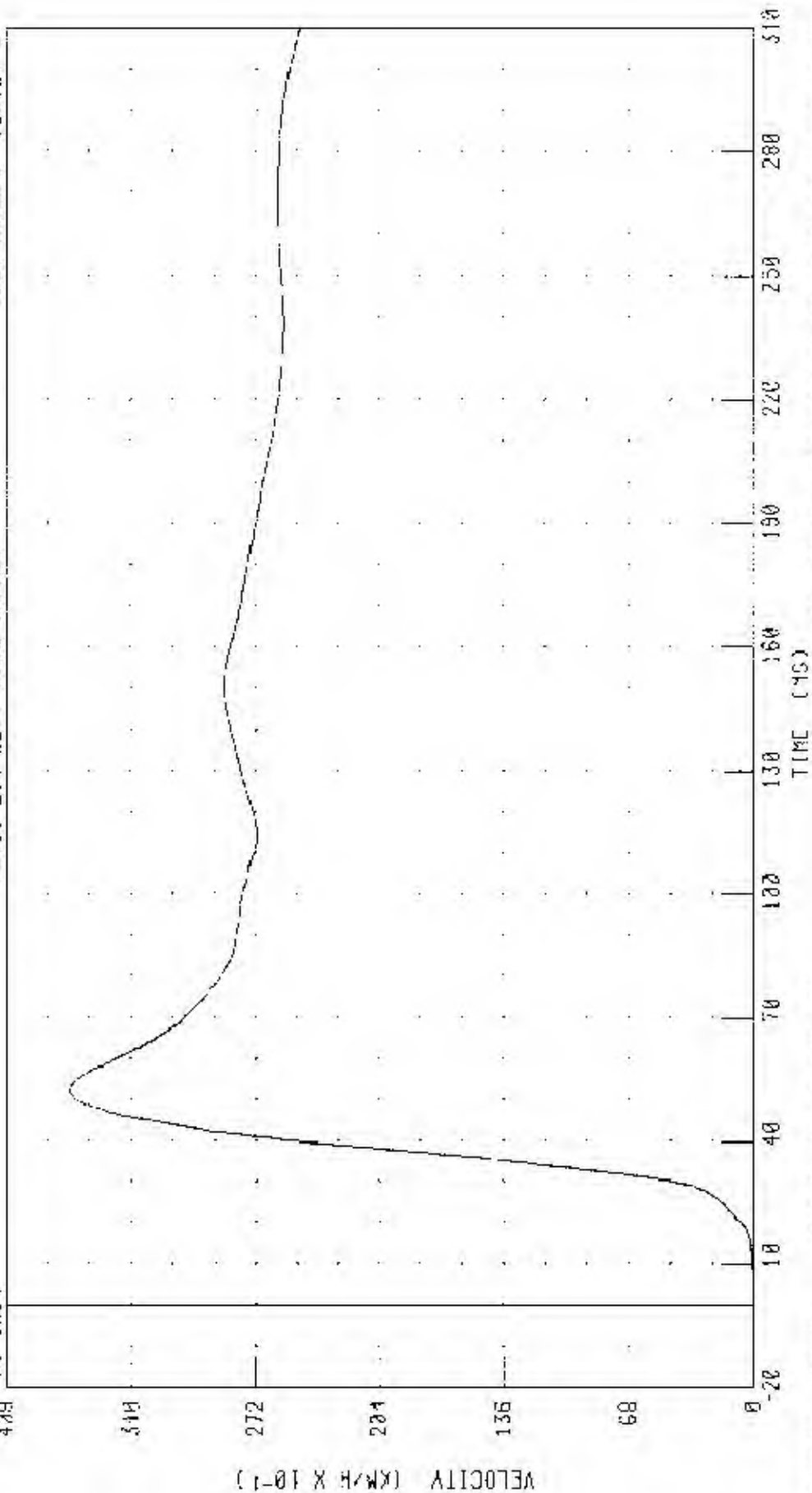
55/20 20H 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT VELOCITY

TEST NUMBER 030924-1

RC INC

PHASE 214 LEFT SIDE IMPACT

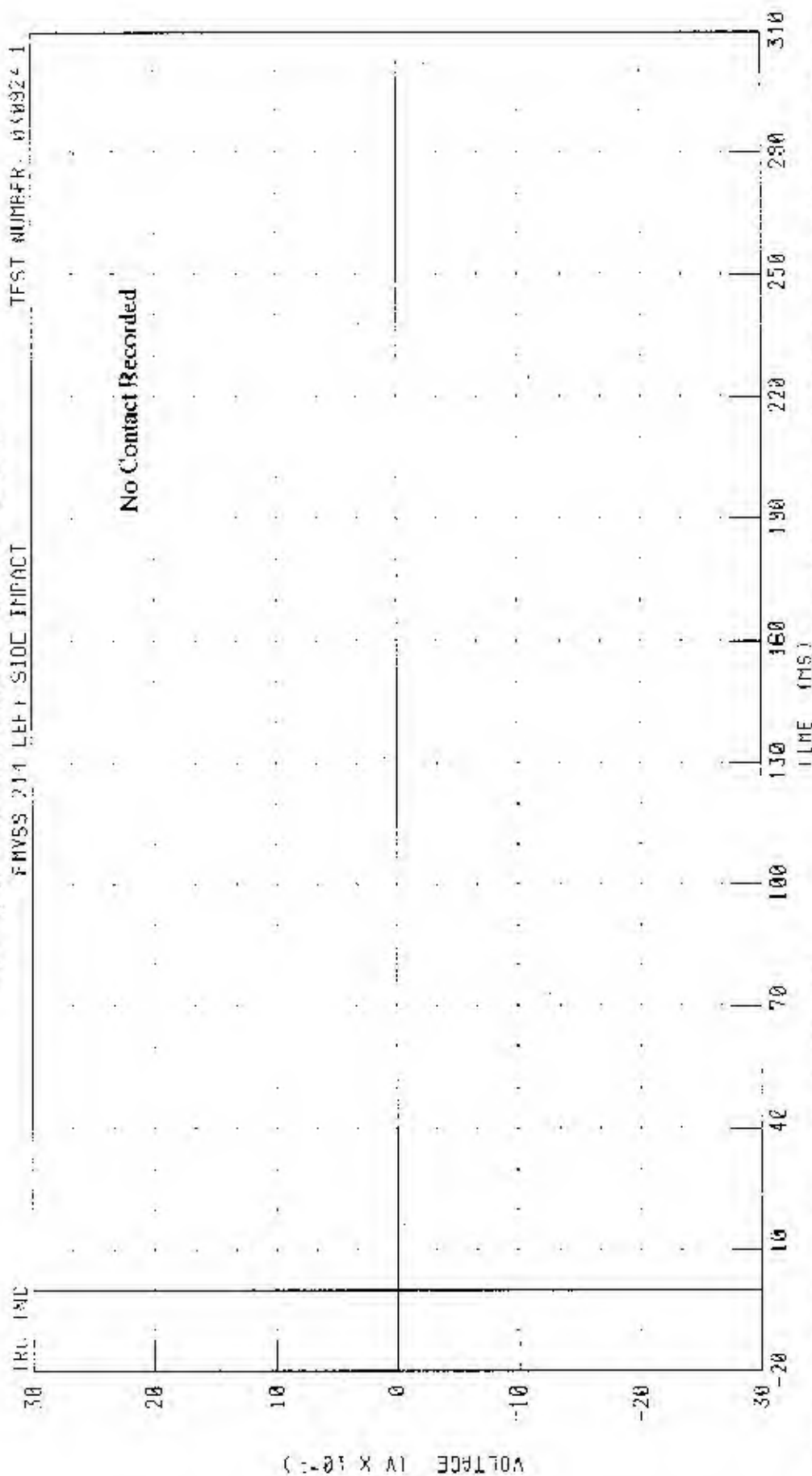


TIME (MS)

CHANNEL PEVYVJ FILTER CH. CLASS 100

PEAK DATA 37 35 KM/H @ 52 56 MS, @ 30 KM/H @ 0 00 MS

55.728 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER: INTO LEFT SIDE OF 2004 FORD EX 350
LEFT REAR PASSENGER SHOULDER CONTACT SWITCH



CHANNEL: SHLE14 FILTER: CH CLASS: 1000

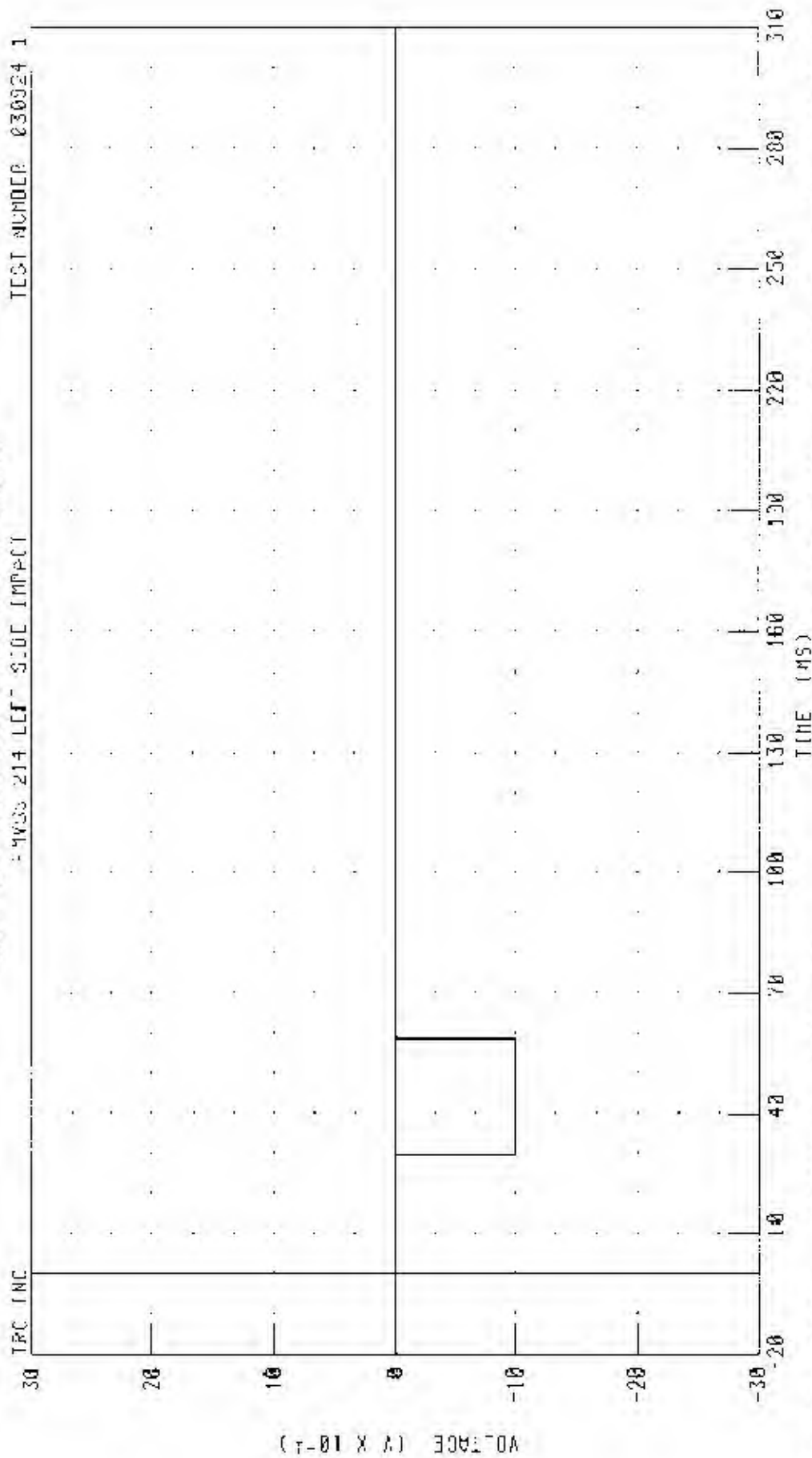
PEAK DATA: 0.00 V @ 310.00 MS; 0.00 V @ -20.00 MS

55/28 KPII 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 FORD FOCUS PK304

LEFT REAR PASSENGER PELVIS CONTACT SWITCH

TEST NUMBER 030924 1

4V030 214 LEFT SIDE IMPACT



CHANNEL PEVET4 FILTER CH. CLASS 1000

PEAK DATA 0 00 V 0 310 00 MS, -1 10 V 0 29 76 MS

Test Vehicle Instrumentation Plots

Acceleration Data - Filter Class 60

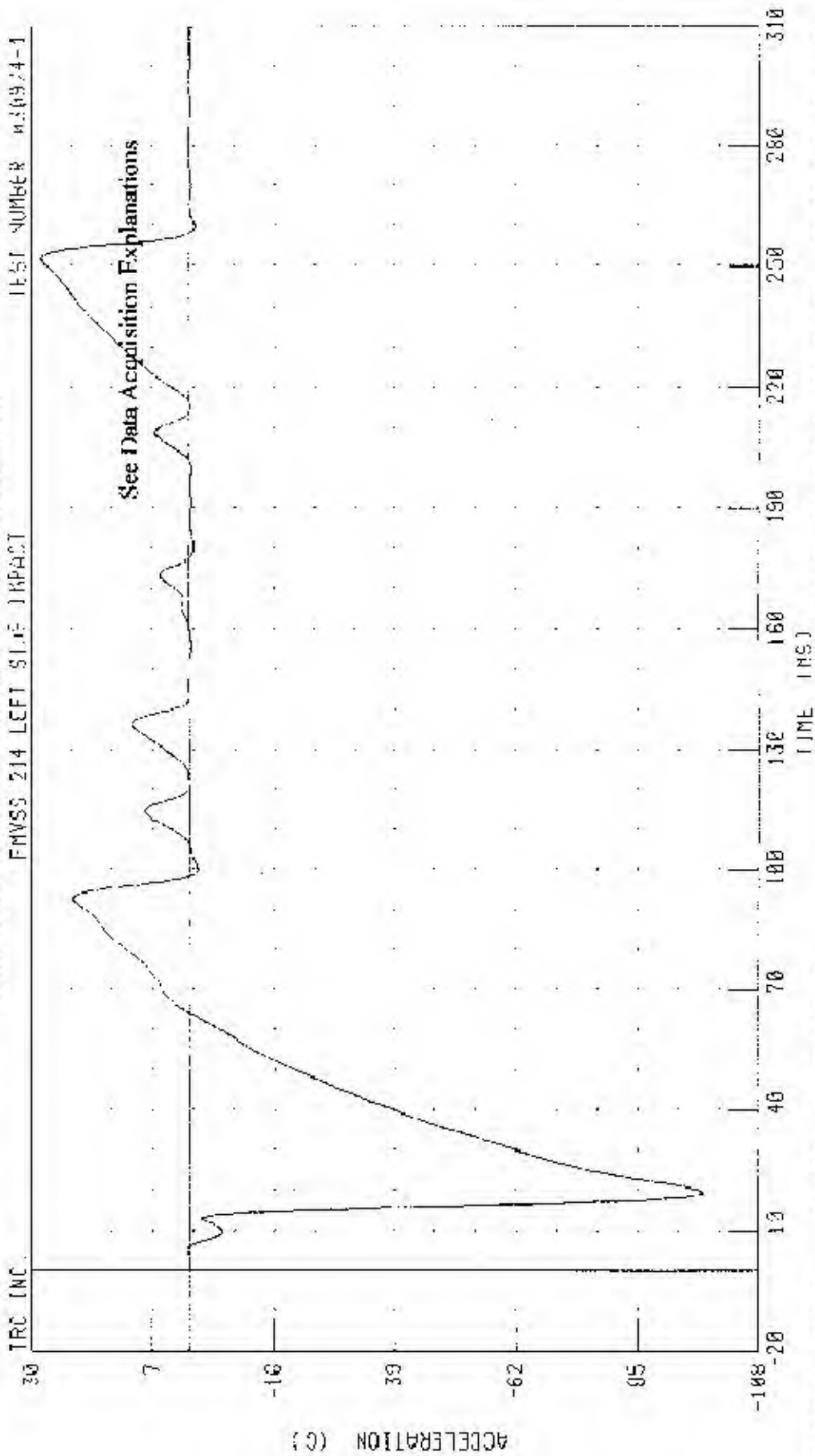
Integration Data - Filter Class 180

55/20 MPH 00 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER M30924-1



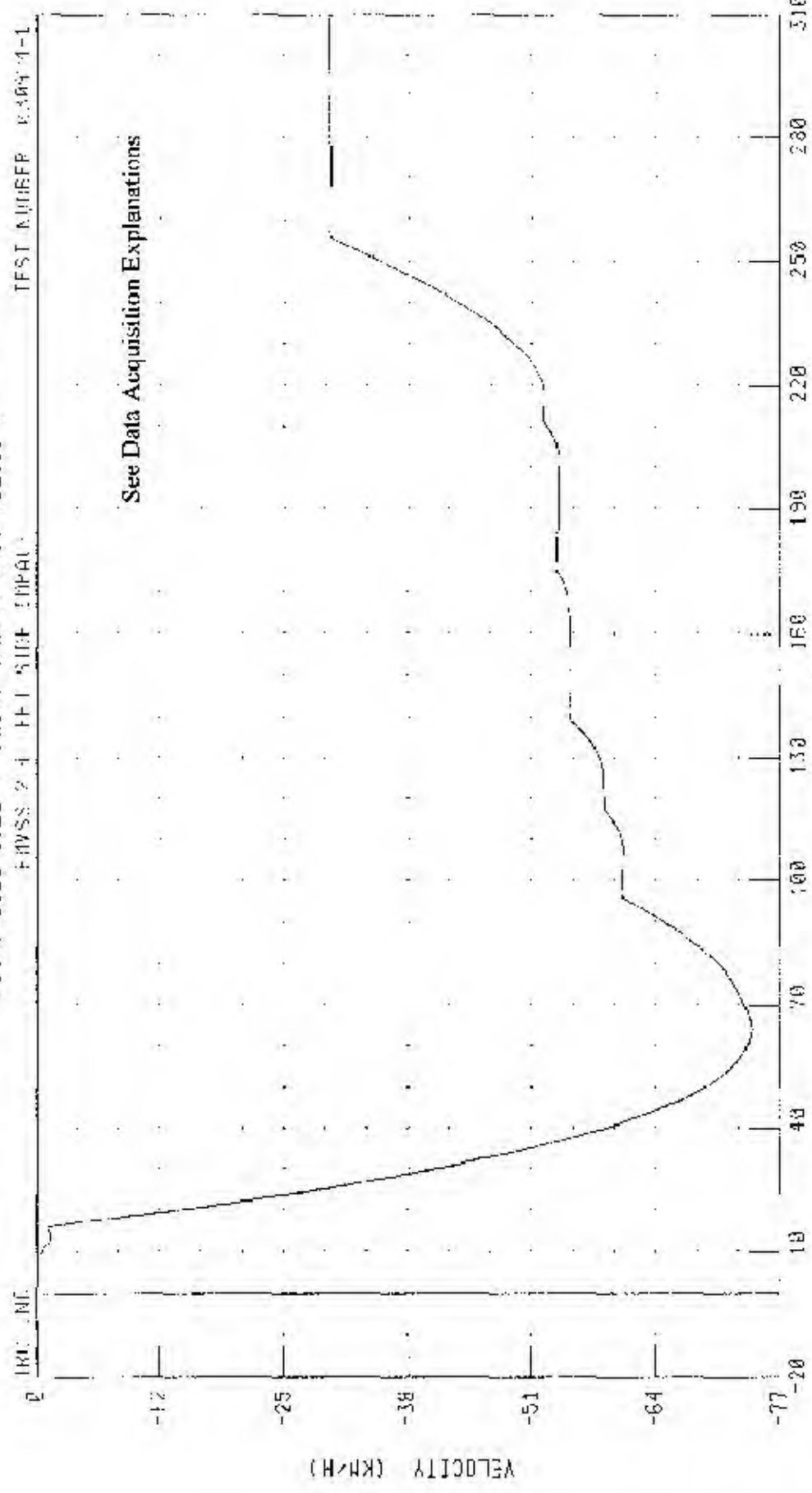
CHANNEL: REFSG2 FILTER: CH CLASS 60

PEAK DATA: 28 15 G @ 251 76 MS, -97 57 G @ 19 44 MS

44.28 MPH 00 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

RIGHT SIDE SILL - 30 FRONT SPOT X-RAYS VELOCITY

TEST NUMBER: E3094-1-1



TIME (MS)

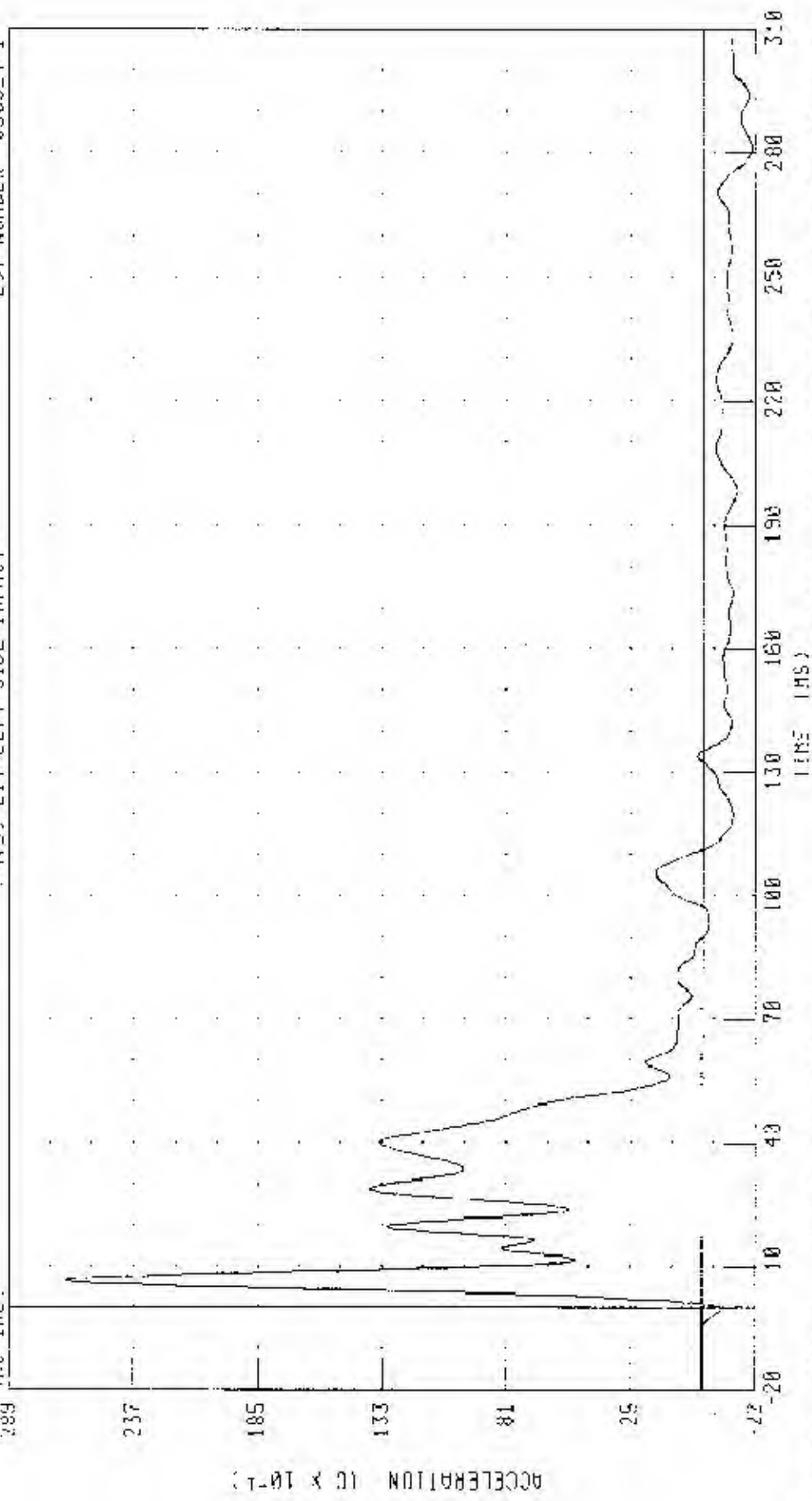
CHANNEL: R=SVX1 FILTER: C4 CLASS: 100 PEAK DATA: 0.11 (0.11) 3.728 MS: -71.89 MPH @ 61.28 MS

55/20 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 FORDS RX330

RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

TEST NUMBER 030924-1

FMVS 214 LEFT SIDE IMPACT

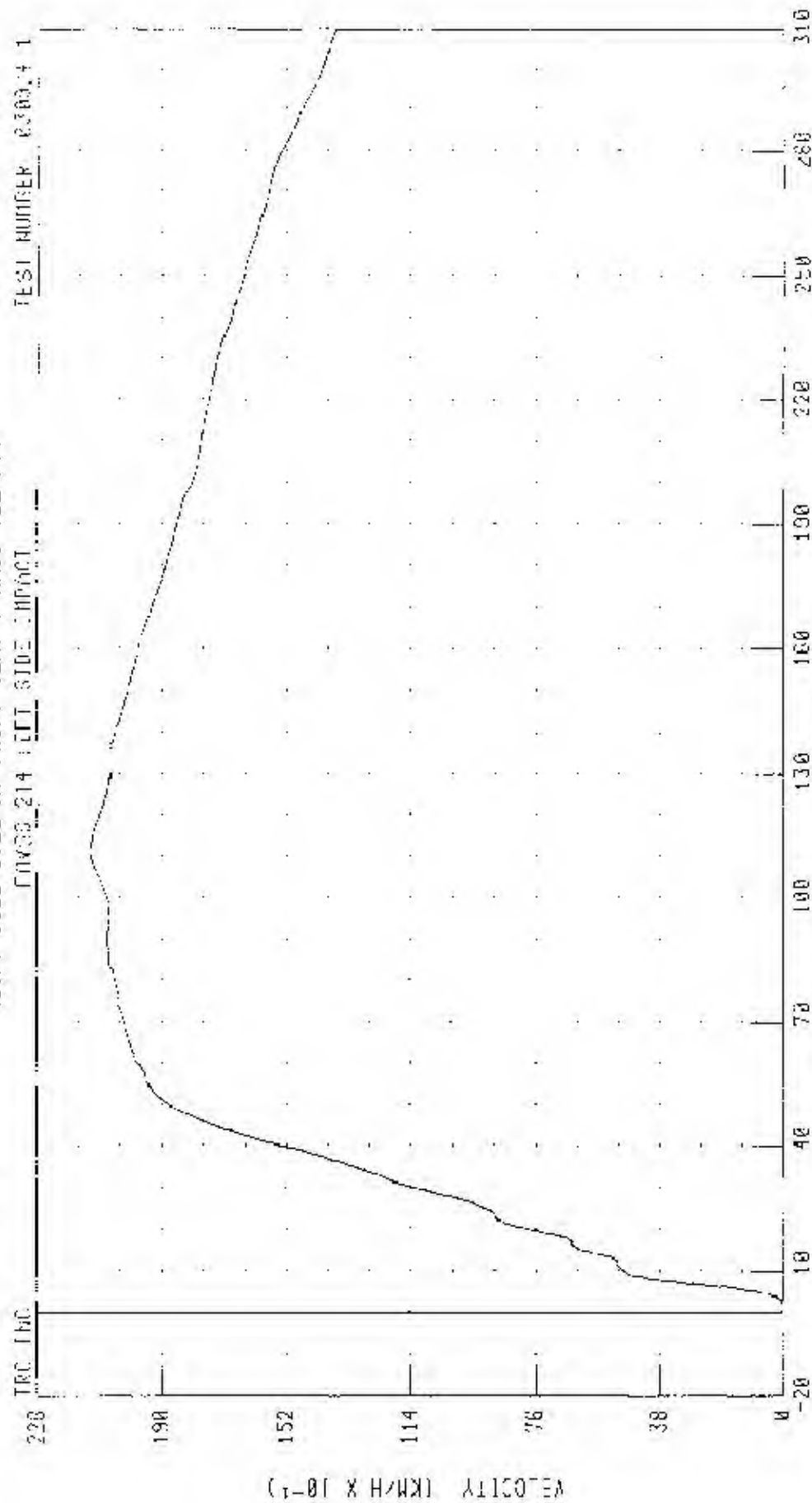


CHANNEL RFS001 FILTER: CH CLASS 60

PEAK DATA 26.69 G @ 6.56 MS, -2.04 G @ 281.04 MS

55/28 MPH 90 DEGREE SLIP IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

RIGHT SIDE SILL ON FRONT SEAT Y-AXIS VEHICLE



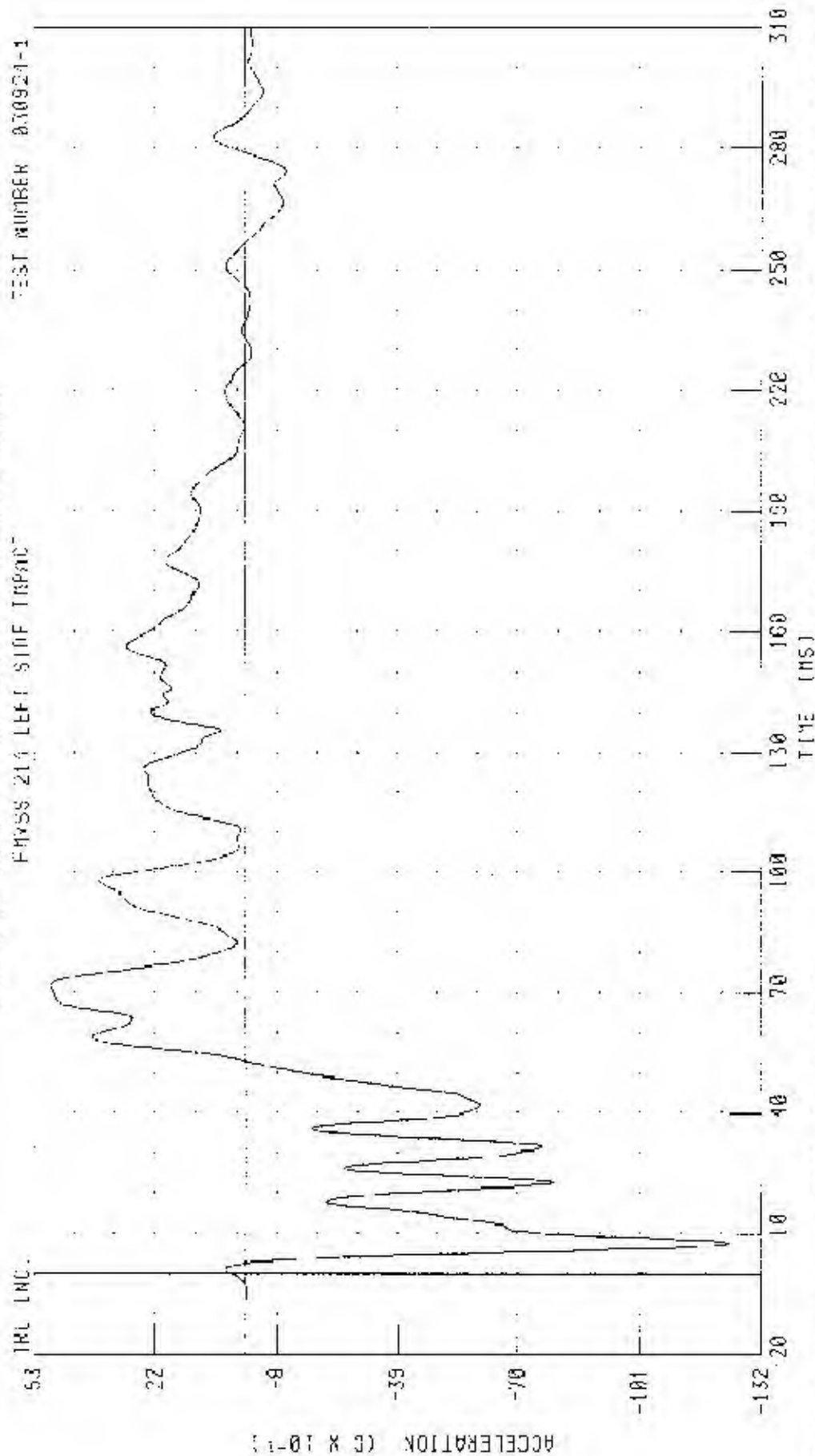
CHANNEL: RFSYV: FILTER: CH: CLASS: 100 PEAK DATA: 21 16 KM/H @ 110 83 15: 0 00 KM/H @ 1 73 15

55/26 MPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 7404 FLEXUS RX330

RIGHT SIDE SILL AT FRONT SEAT 7-GALS AMPLIFICATION

TEST NUMBER 030924-1

PHYS 214 LEFT SIDE IMPACT

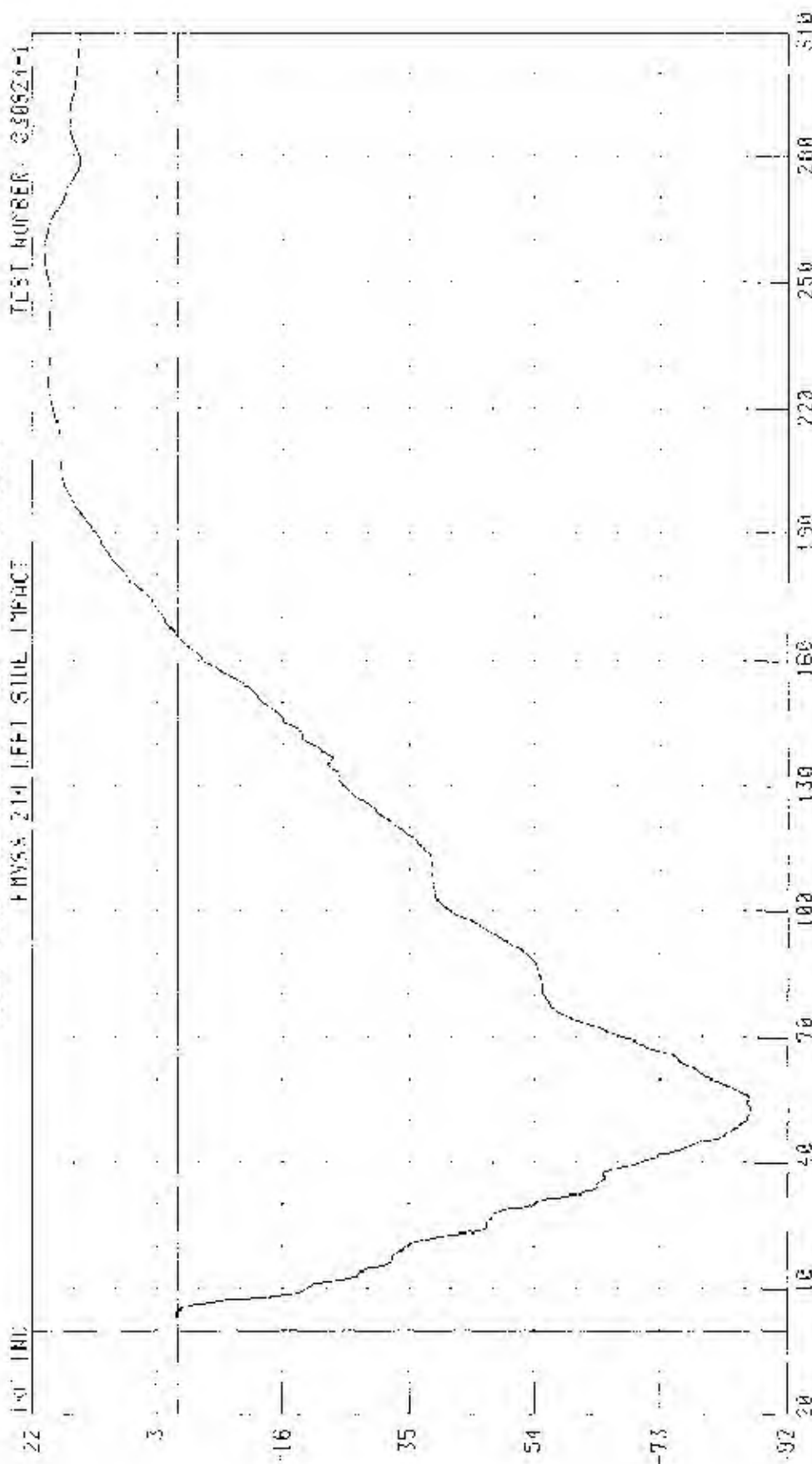


CHANNEL RFSZG1 FILTER CII CLASS 60

PEAK DATA 4 95 G @ 72.98 MS. -12.40 G @ 7.52 MS

S5/26 KPH 92 DEGREE SIDE IMPACT (MOVING VEHICLE BARRIED) INTO LEFT SIDE OF 2004 FORD EX35R

RIGHT SIDE SILL TO PROX SEAT 2-AXIS VELOCITY



TIME (MS)

CHANNEL: RFS7W1 FILTER: CH CLASS: 180

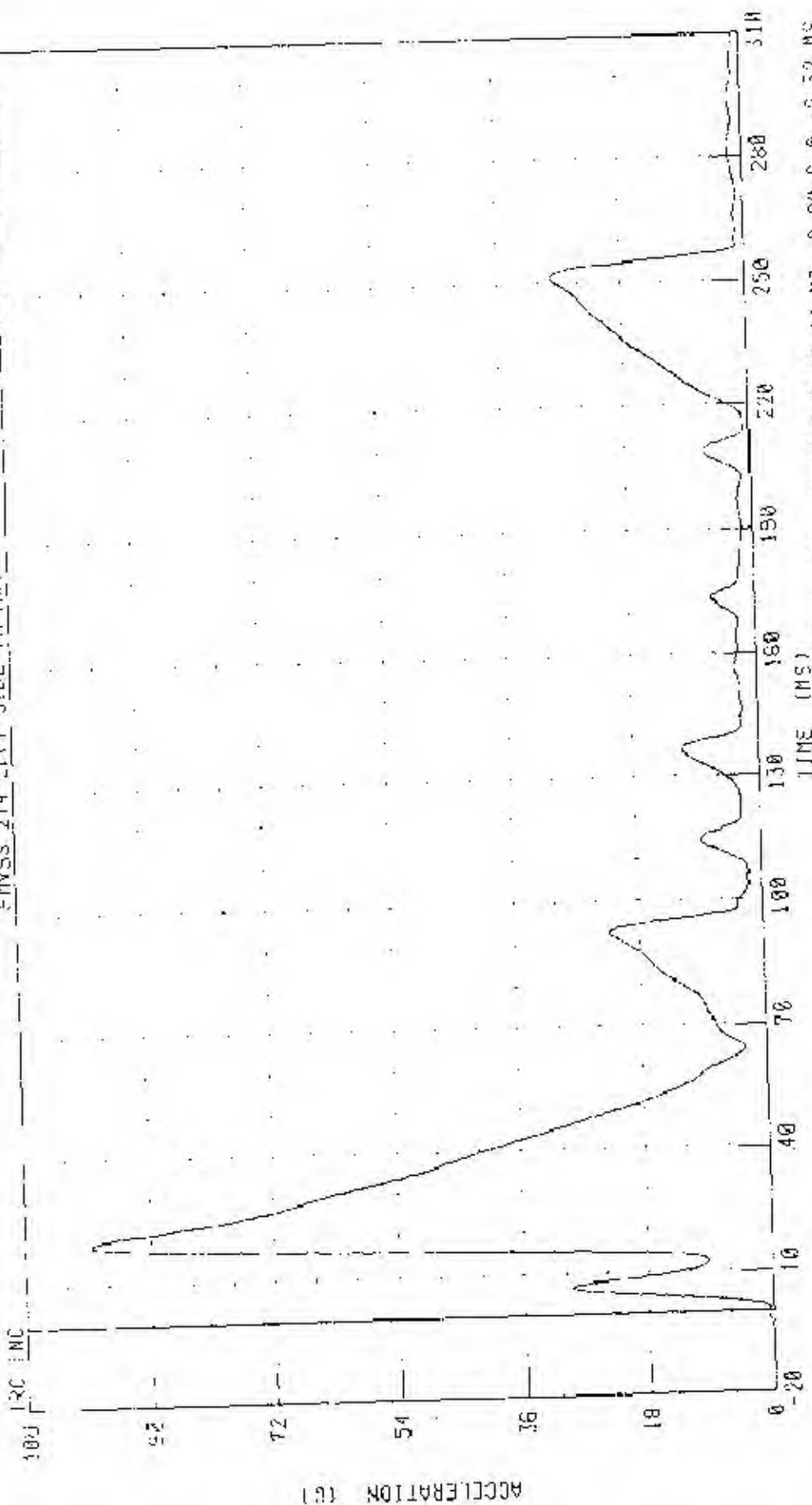
PEAK DATA: 7.02 KPH @ 253 12 DEG, -8.64 KPH @ 52.56 MS

55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

RICH) SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

TEST NUMBER 030924-1

ENVSS 214 LEFT SIDE IMPACT



PEAK DATA 38 50 G @ 19 44 MS, 0 00 G @ -0 32 MS

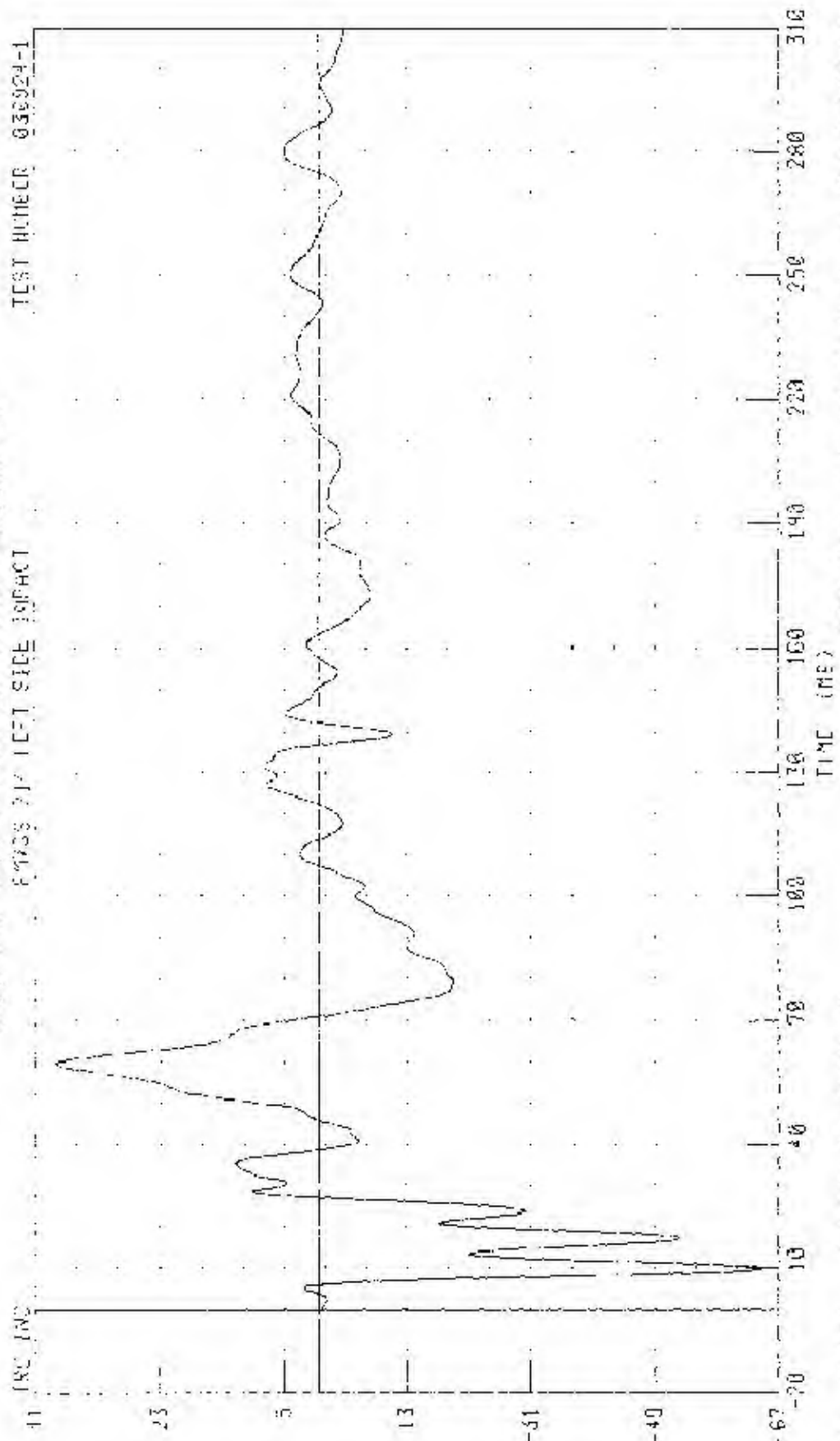
CHANNEL: RFSRCY FILTER: CH. CLASS 60

55/28 MPH 90 DEGREE SIDE IMPACT (MOVING OFFROADABLE BARRIER) INTO LEFT SIDE OF 2004 FORDS EX-350

RIGHT SIDE COLL. OF 2004 SEAT X-RAY RECORDATION

TEST NUMBER 030924-1

84355 21/ LEFT SIDE IMPACT

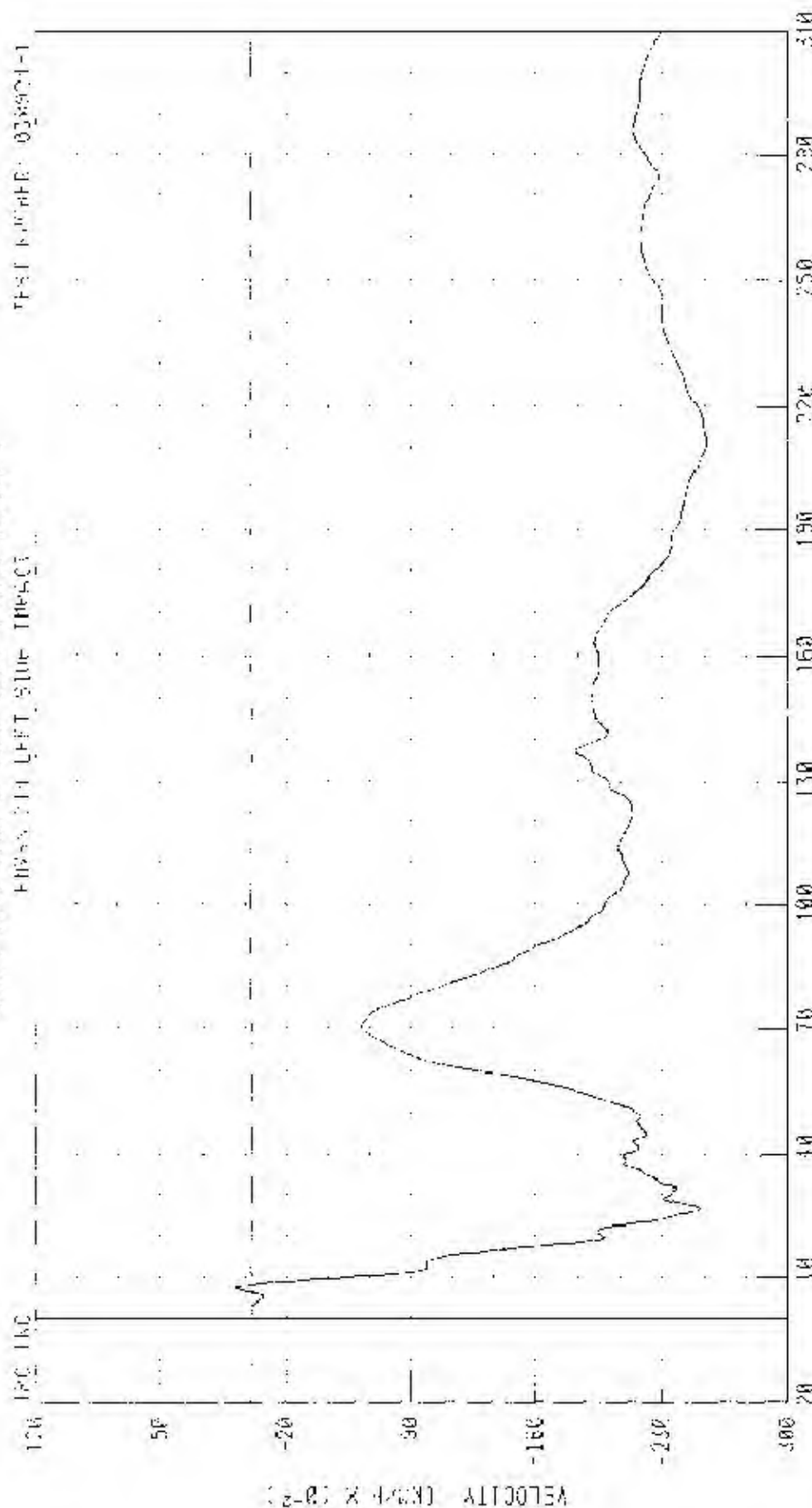


PEAK DATA 3.82 5.8 59.76 MS, -5.47 6.8 3.76 MS

CHARALL RRSXG1 COLLIER CH CLASS 80

55.28 KPH 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 JESUS 50530

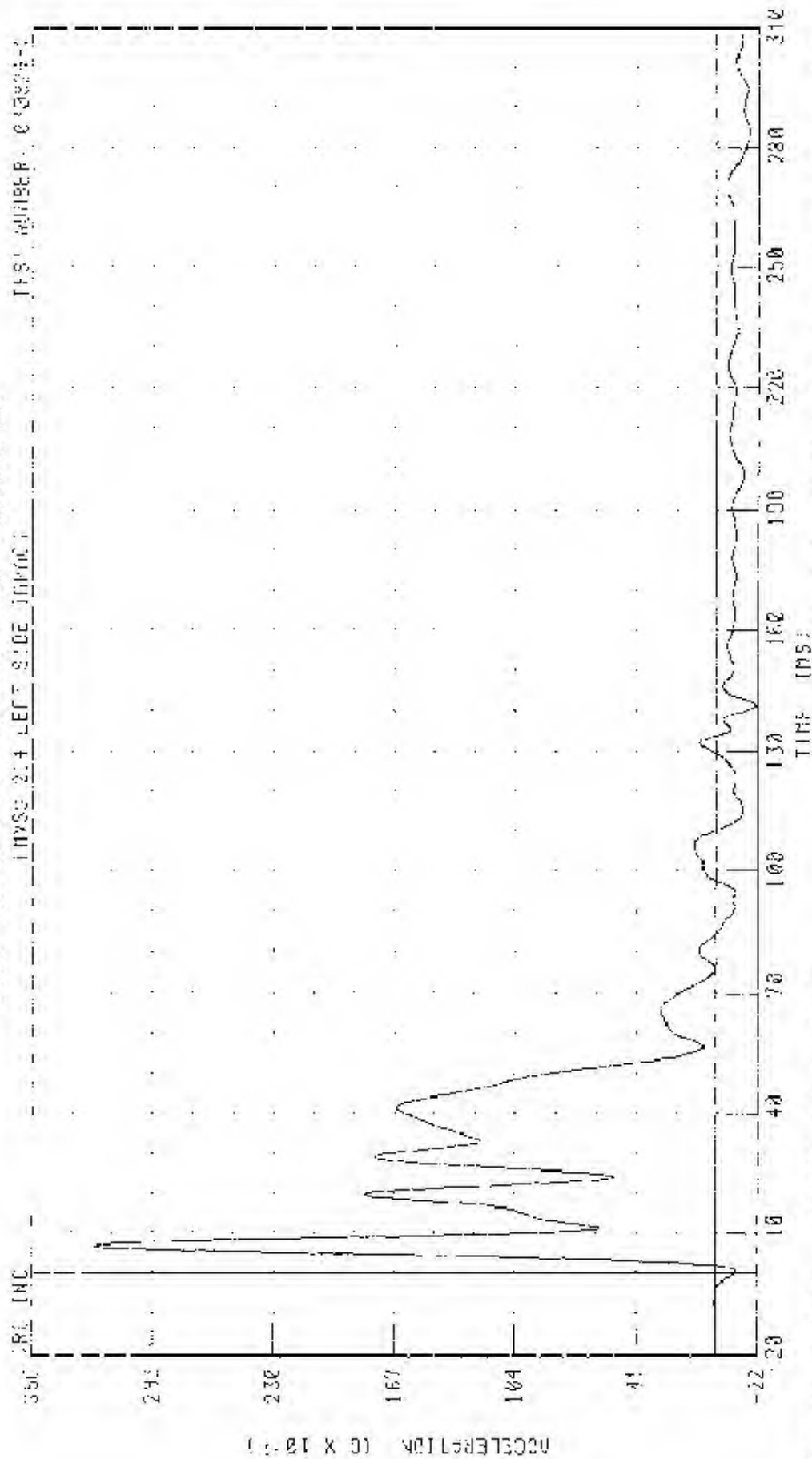
RIGHT SIDE SILL AT REAR SEAT X AXIS VELOCITY



CHANNEL 005XVI 1111R CAL CLASS 150

TIME (MS) 0 005 KPH 0 7 44 MS, -2 54 2001 @ 310 50 15

05/28 FRS 50 DEGREE STOP IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX350
 RIGHT SIDE CURT FT FOR SENT V AXIS ACCELERATION



CHANNEL RASG01 FILTER CH CLASS 60

PEAK DATA 32 38 6 6 80 MS: -2 08 0 0 141 38 MS

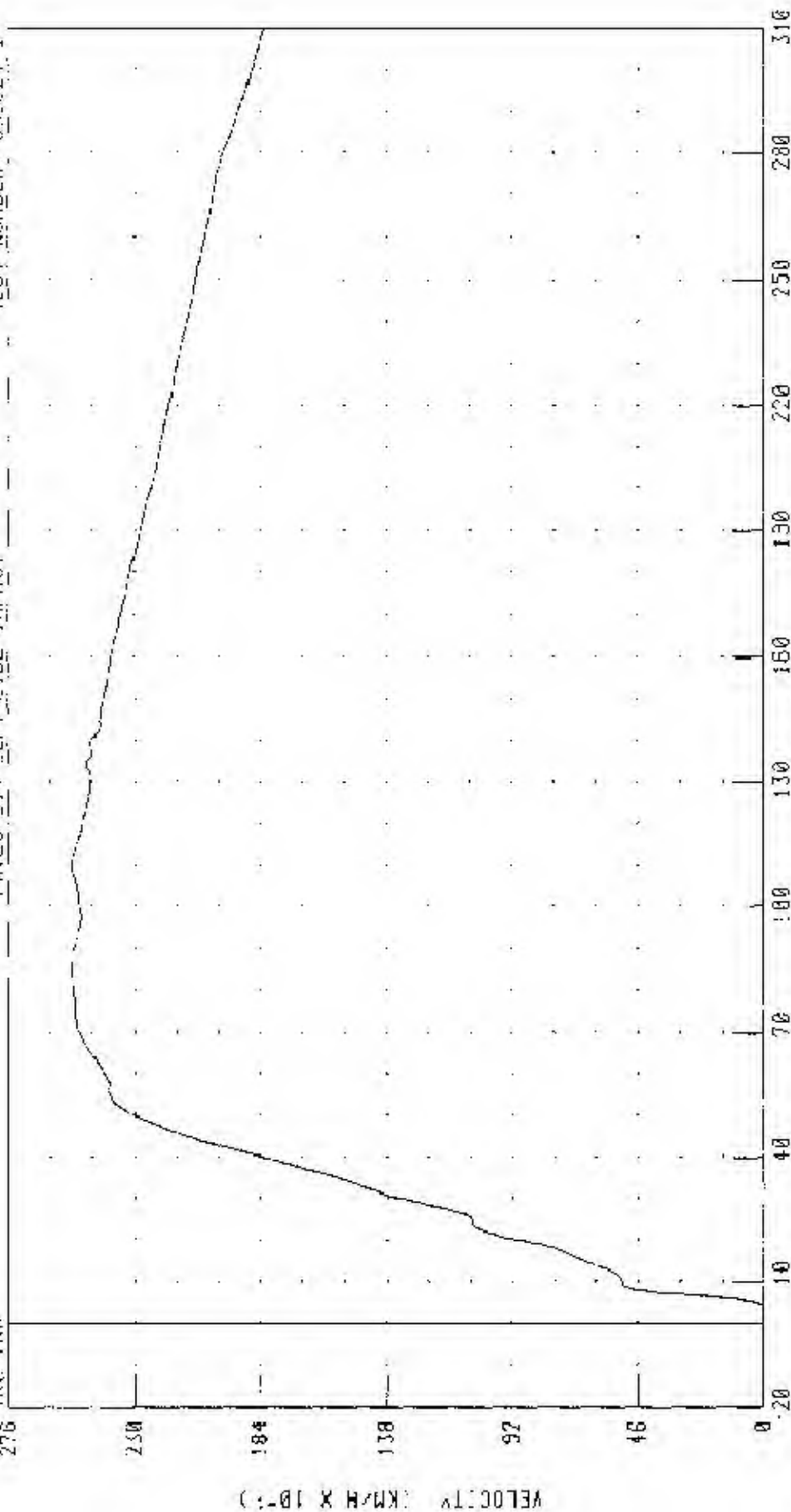
55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

RIGHT SIDE SILL AT REAR SEPT Y-AXIS VELOCITY

TEST NUMBER: 030924-1

FMVSS 214 LEFT SIDE IMPACT

TRC INC

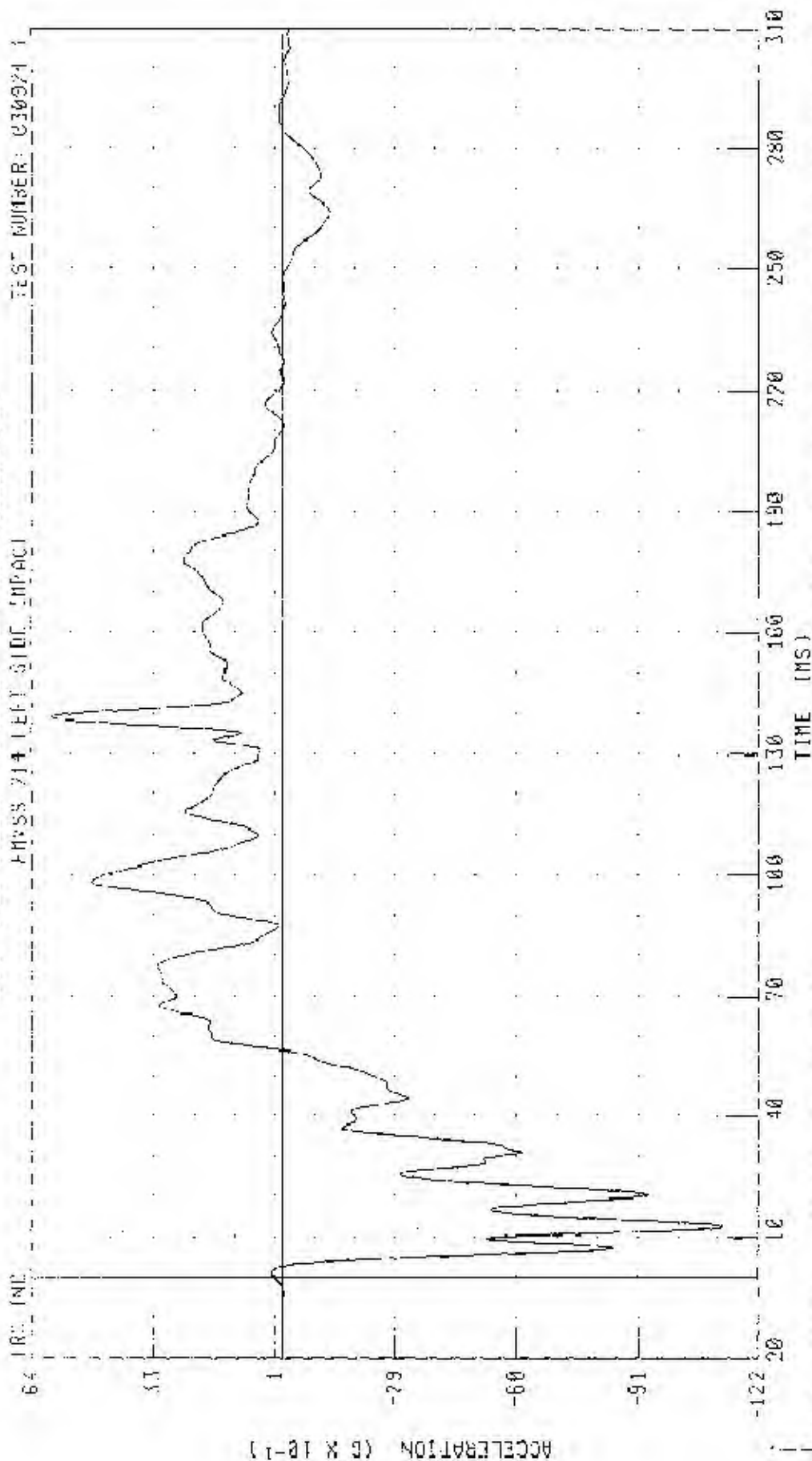


TIME (MS)

CHANNEL: RRSYV1 FILTER: CH CLASS: 120

PEAK DATA: 25.23 KM/H @ 02.00 MS, 0.00 KM/H @ 0.00 MS

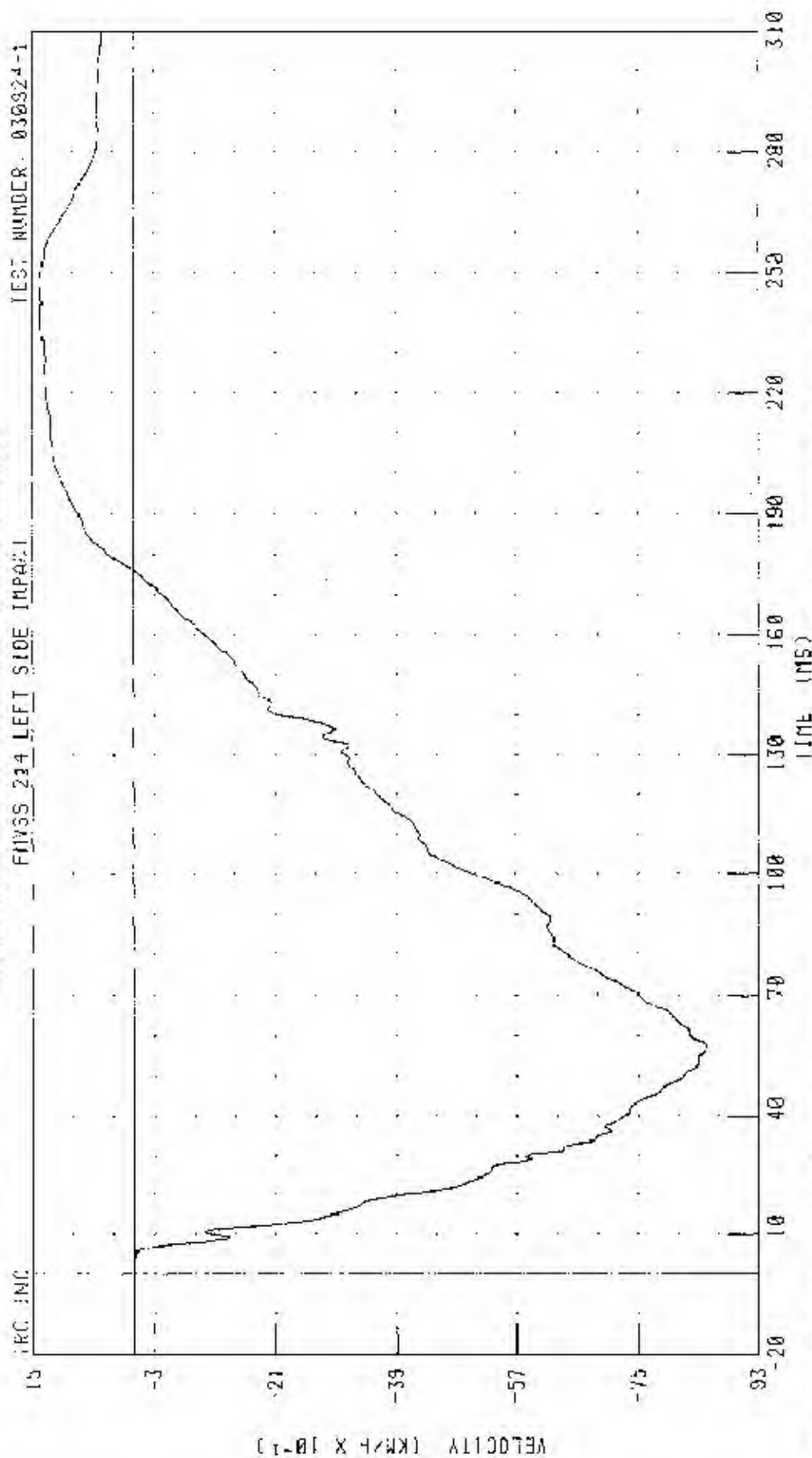
35 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330
 RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION



PEAK DATA 5 90 G 9 159 33 MS, -11 29 G @ 12 156 MS

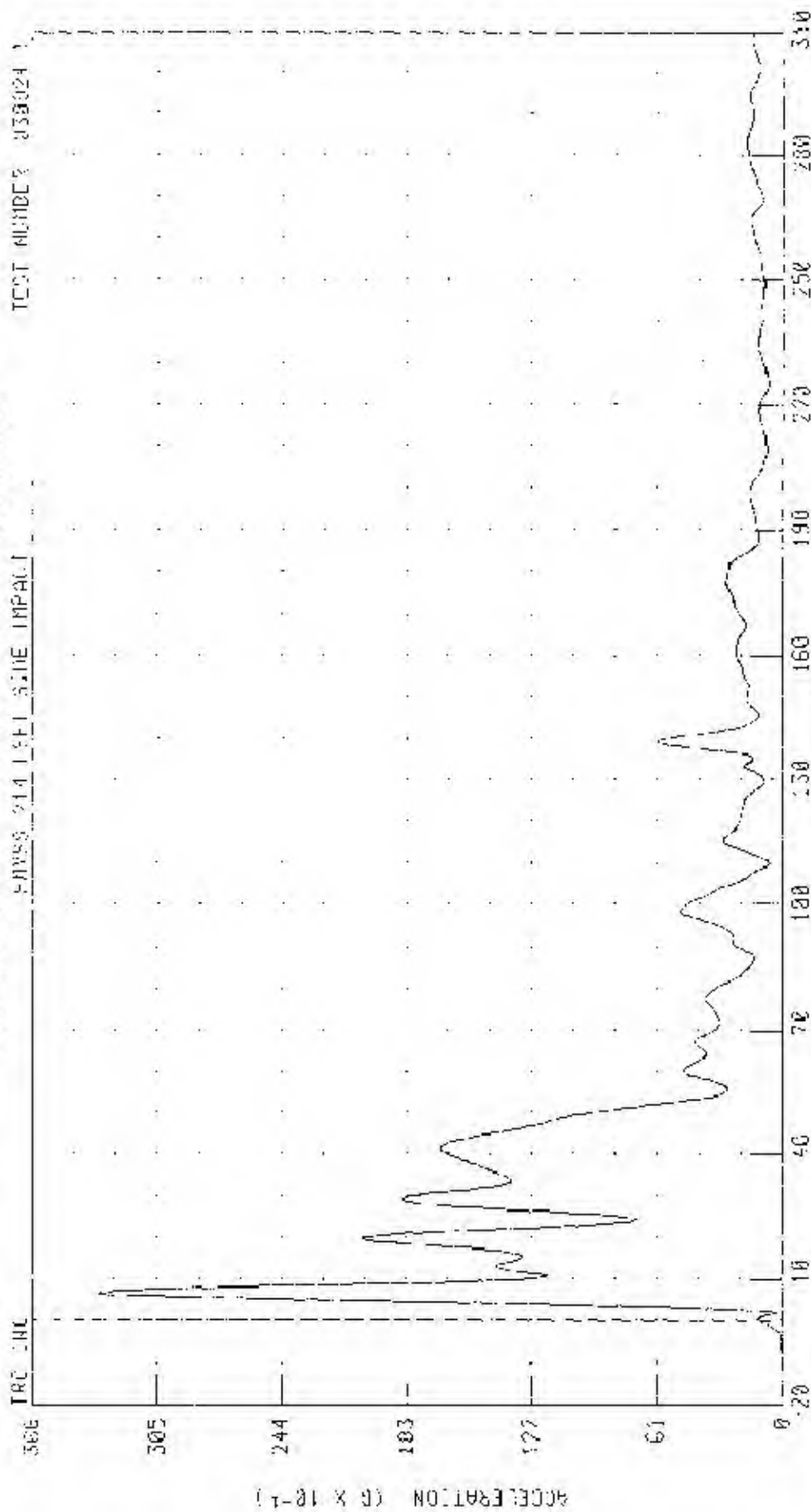
CHANNEL 8RSZ01 FILTER CH CLASS 60

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330
 RIGHT SIDE SILL AT REAR SEAT Z-AXIS VELOCITY



VELOCITY (KPH X 10-1)

55-16 KTH 00 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) - NO EFFECT LINE OF 2004 TEXAS 523405
 RIGHT SIDE SHELTER - RAMP SLO. BEFORE LAMP SUBSTITUTION



FLAK DATA: 53.39 0 0 6.00 MS 0.00 0 0 0.00 MS

CHANNEL: RRSG1 FILTER: ON CLASS: 00

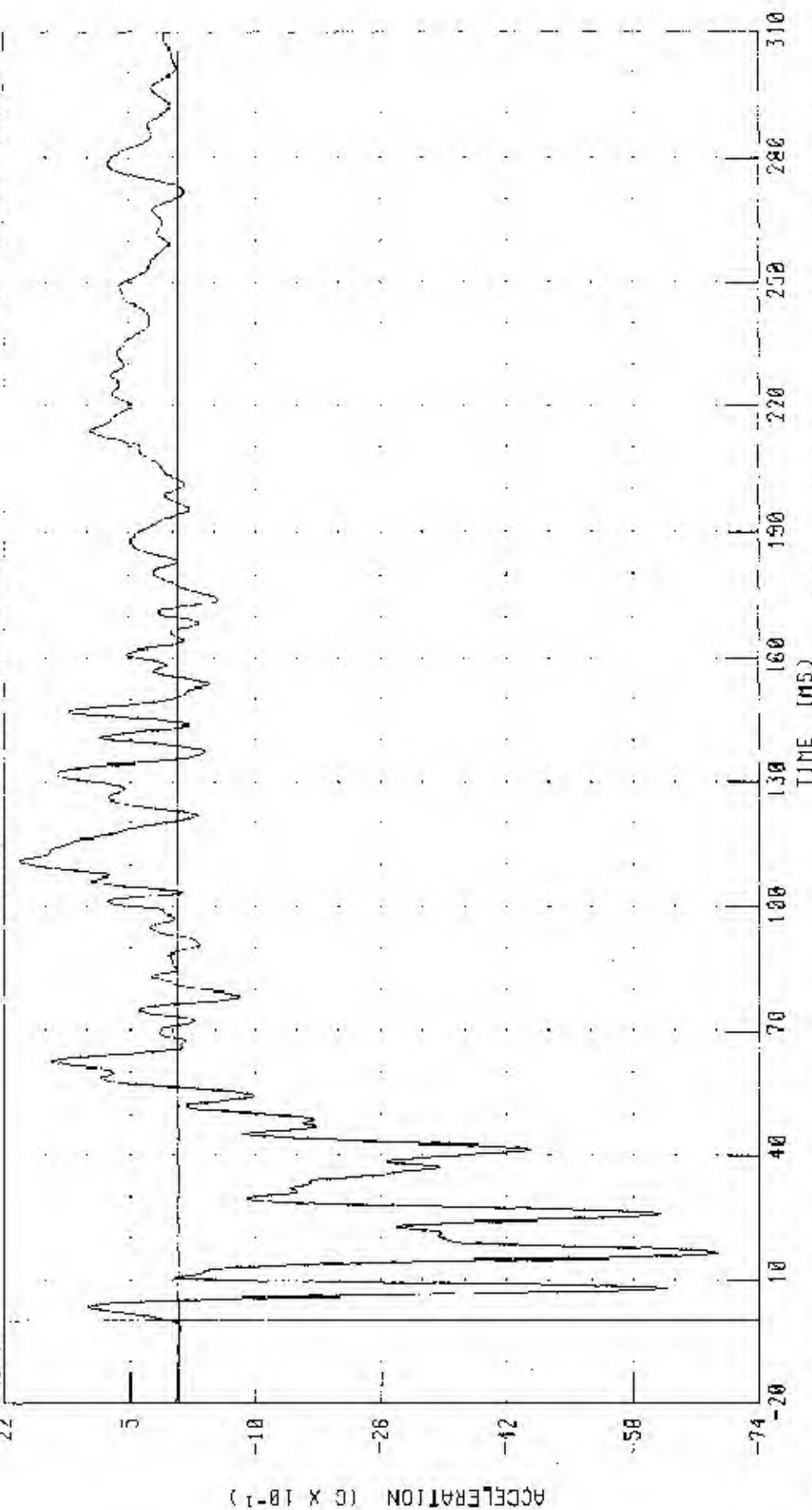
55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION

TEST NUMBER A30924-1

FMVSS 214 LEFT SIDE IMPACT

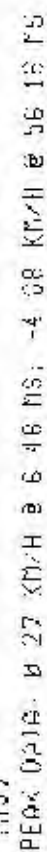
TRC INC



CHANNEL: RDXK61 FILTER: CH. CLASS 60

PEAK DATA 2 02 0 0 110 00 MS, -6 88 0 0 16.24 MS

ISSI NUMBER: 050324-1

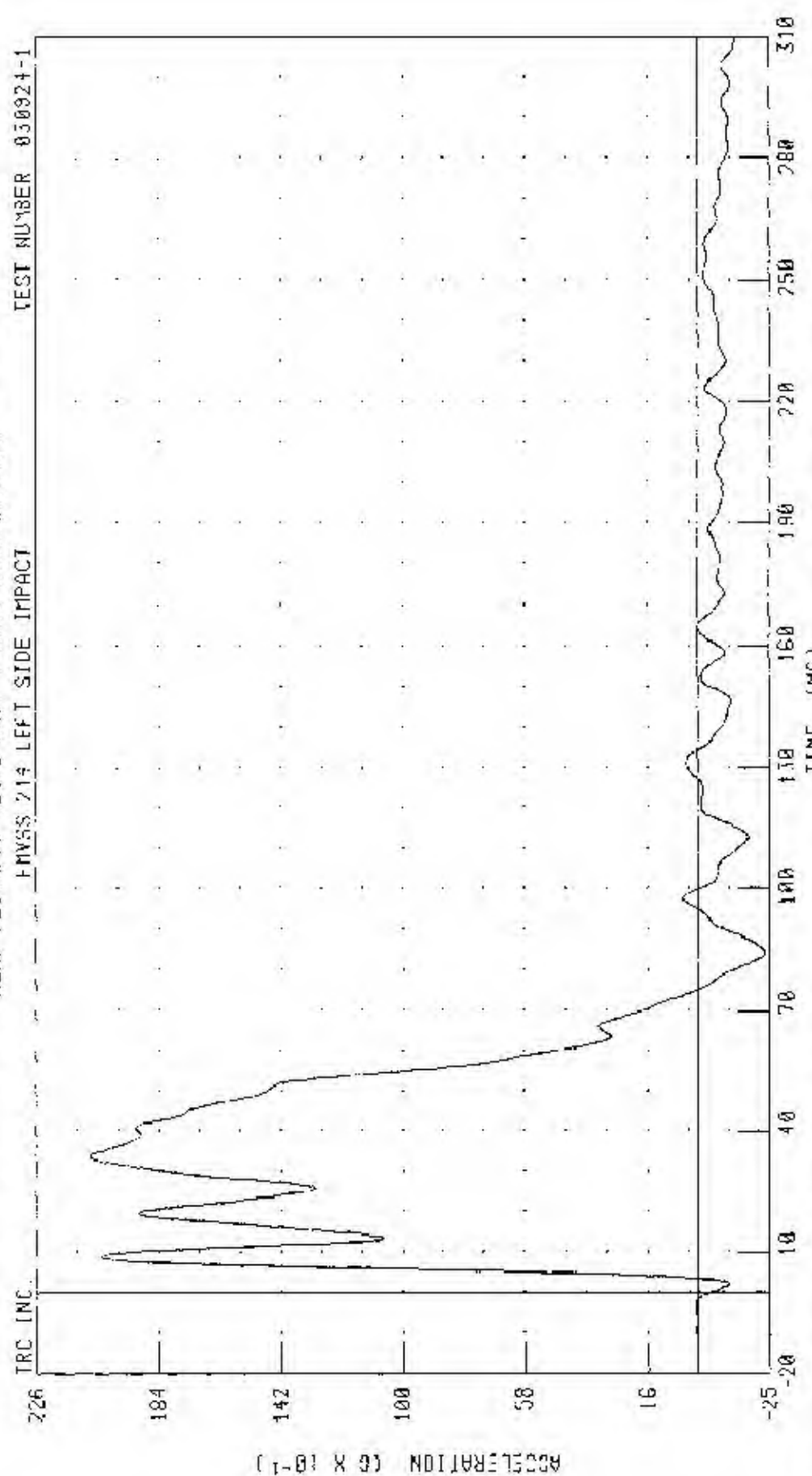


030924-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330
 REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

TEST NUMBER 030924-1

FMVSS 214 LEFT SIDE IMPACT



ACCELERATION (G X 10^-1)

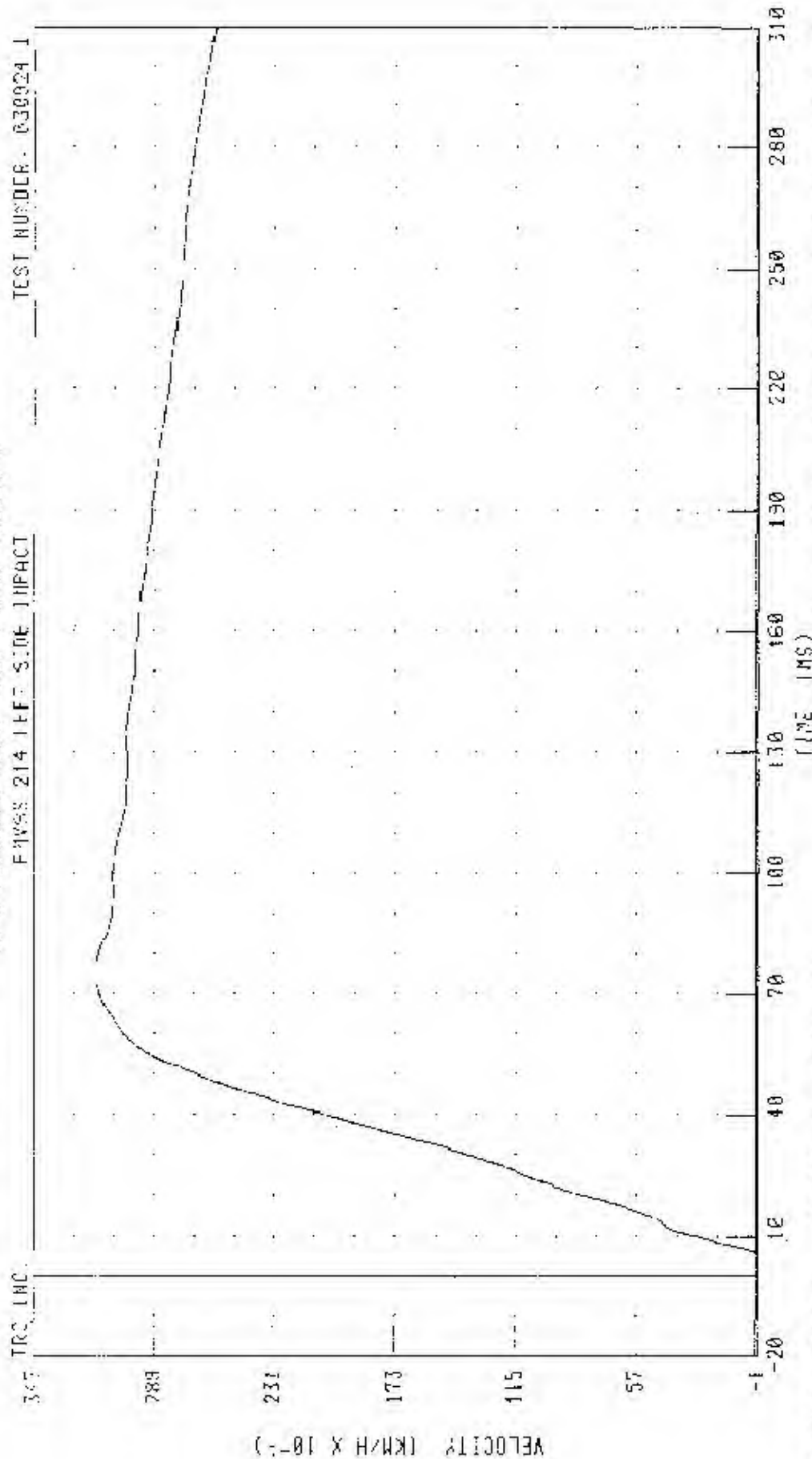
TIME (MS)

CHANNEL RDKY61 FILTER: CH. CLASS 6B

PEAK DATA: 20.87 G @ 33.68 MS, -2.34 G @ 84.24 MS

55/28 KPH 00 OFF-REE SIDE IMPACT MOVING, DEFORMABLE BARSTER, INTO LEFT SIDE OF 2004 LEXUS RX330

REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY



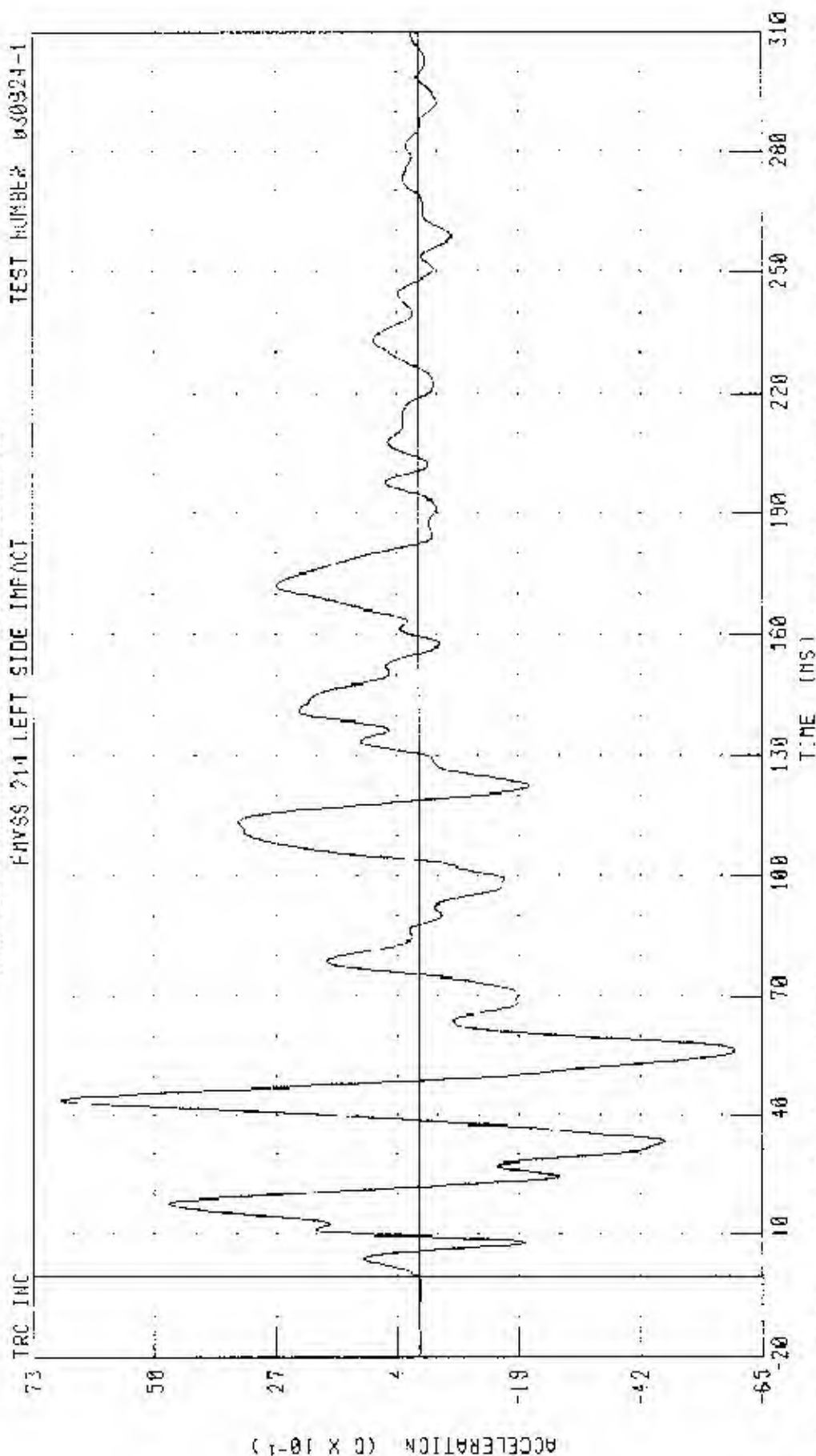
CHANNEL: RDKYV1 FILTER: 04, CLASS: 100

PEAK DATA: 31.58 CMH @ 75.04 MS, -0.13 KPH @ 5.04 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

REAR FLOORPAN DRIVE AXLE Z AXIS ACCELERATION

PHYSS 214 LEFT SIDE IMPACT TEST NUMBER 030924-1



CHANNEL RDK/G1 FILTER 34 CLASS 60

PEAK DATA: 6 31 6 0 44 08 MS, -5 99 0 6 56 06 MS

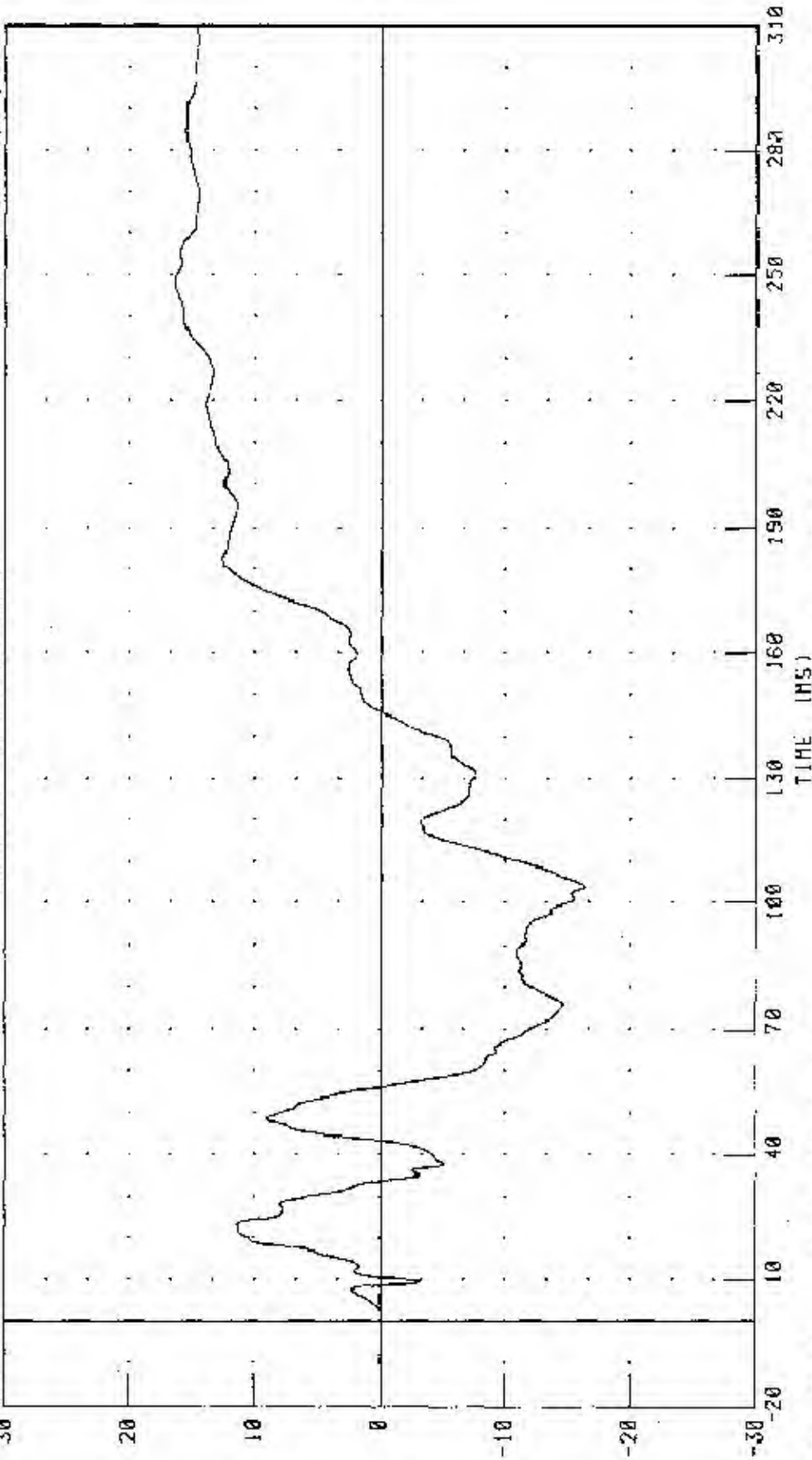
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2001 LEXUS RX330

REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: RDKZY1 FILTER: GH CLASS 180

PEAK DATA: 1.63 KM/H @ 247.68 MS; -1.64 KM/H @ 104.08 MS

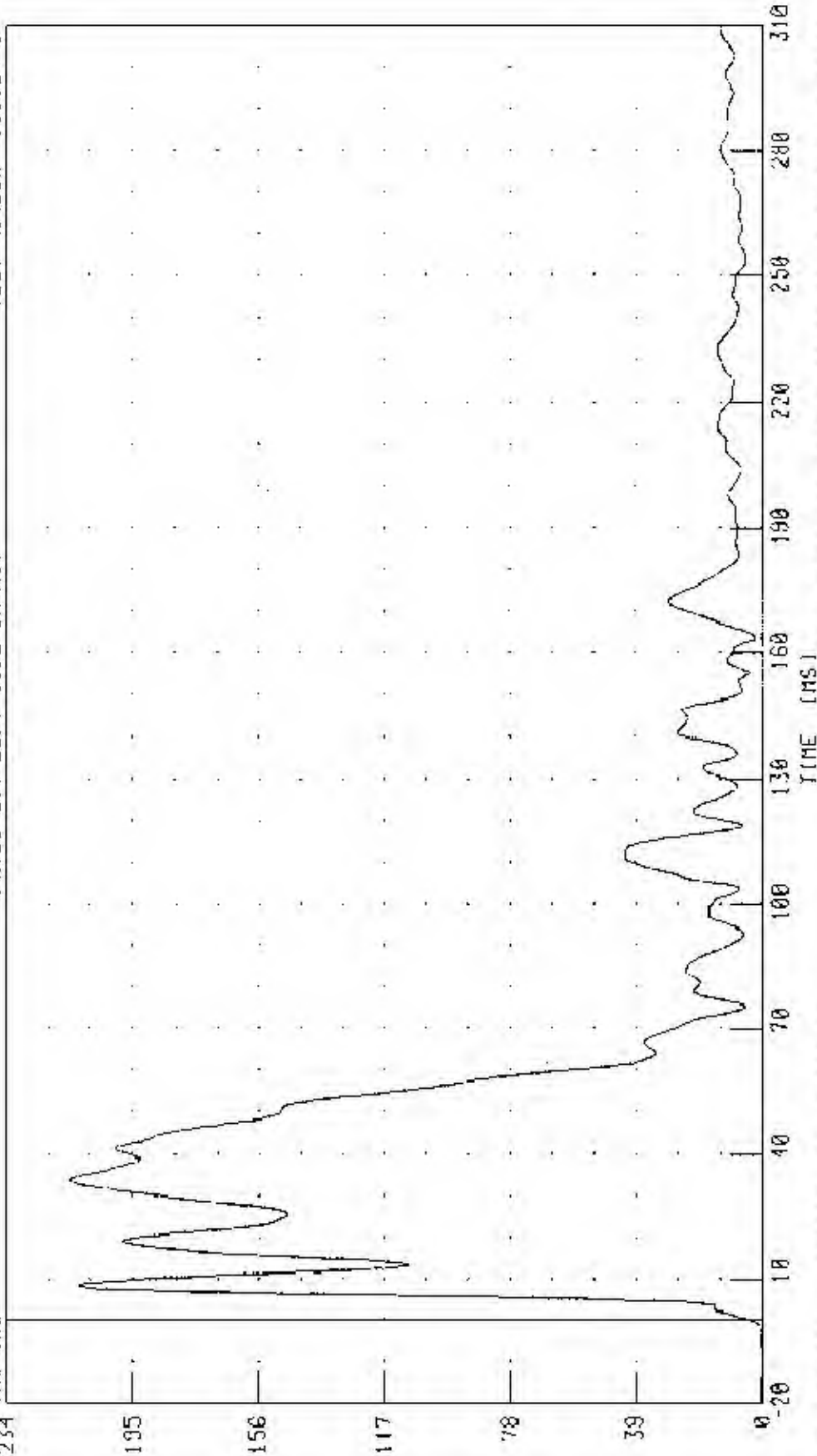
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

TEST NUMBER 030924-1

FMVSS 214 LEFT SIDE IMPACT

TRC INC



ACCELERATION (G X 10^-2)

TIME (MS)

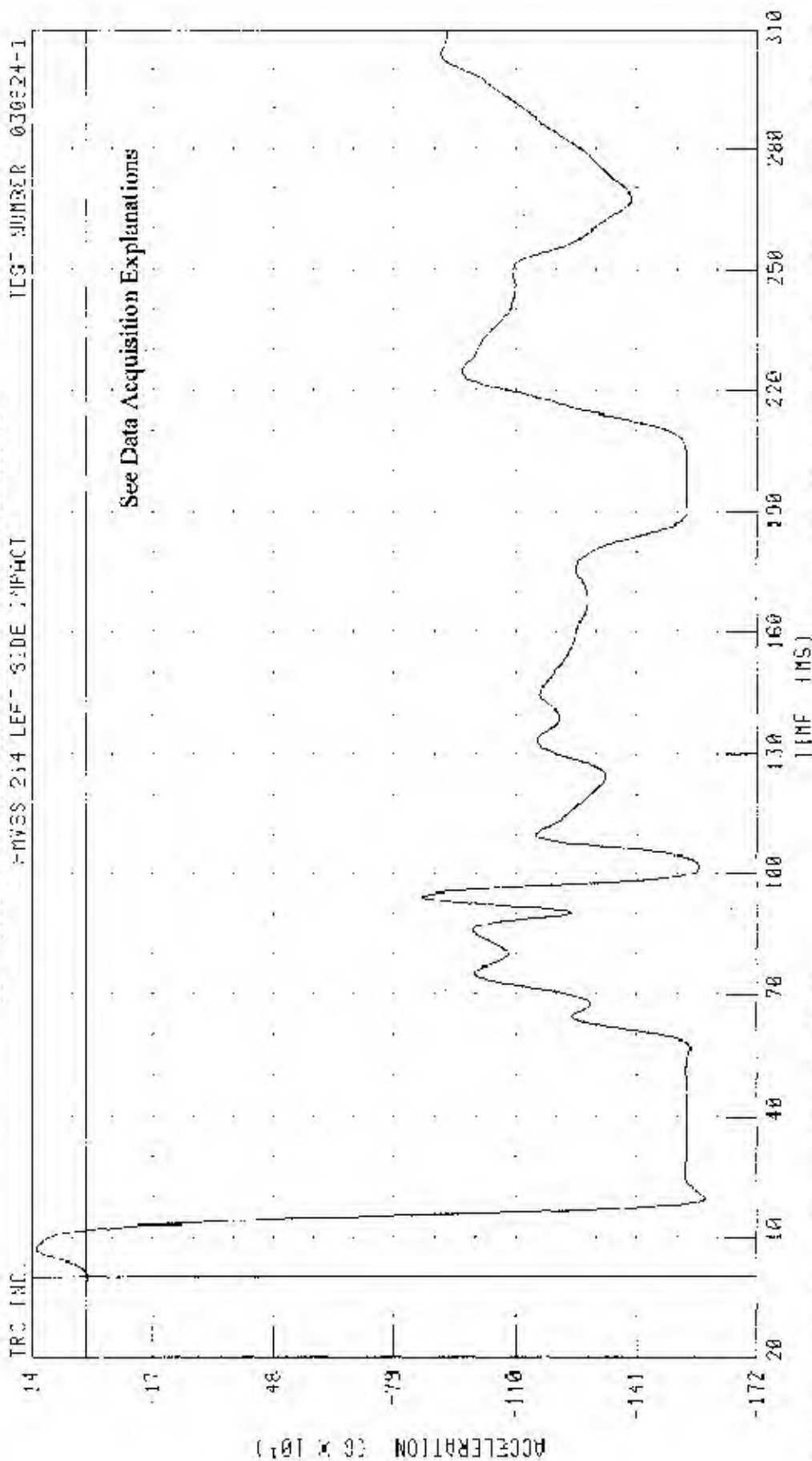
CHANNEL R0KRC1 FILTER CH. CLASS 60

PEAK DATA 21.45 G @ 33.66 MS; 0.01 G @ -7.92 MS

35/20 KPA 00 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER - JMD LEFT SIDE OF 2004 LEXUS RX330

LEFT SIDE GILL AT FRONT SEAT Y-AXIS ACCELERATION

TRC INC. - MVSS 214 LEFT SIDE IMPACT TEST NUMBER 030924-1



CHANNEL 11SYG1 FILTER: CH. CLASS 62

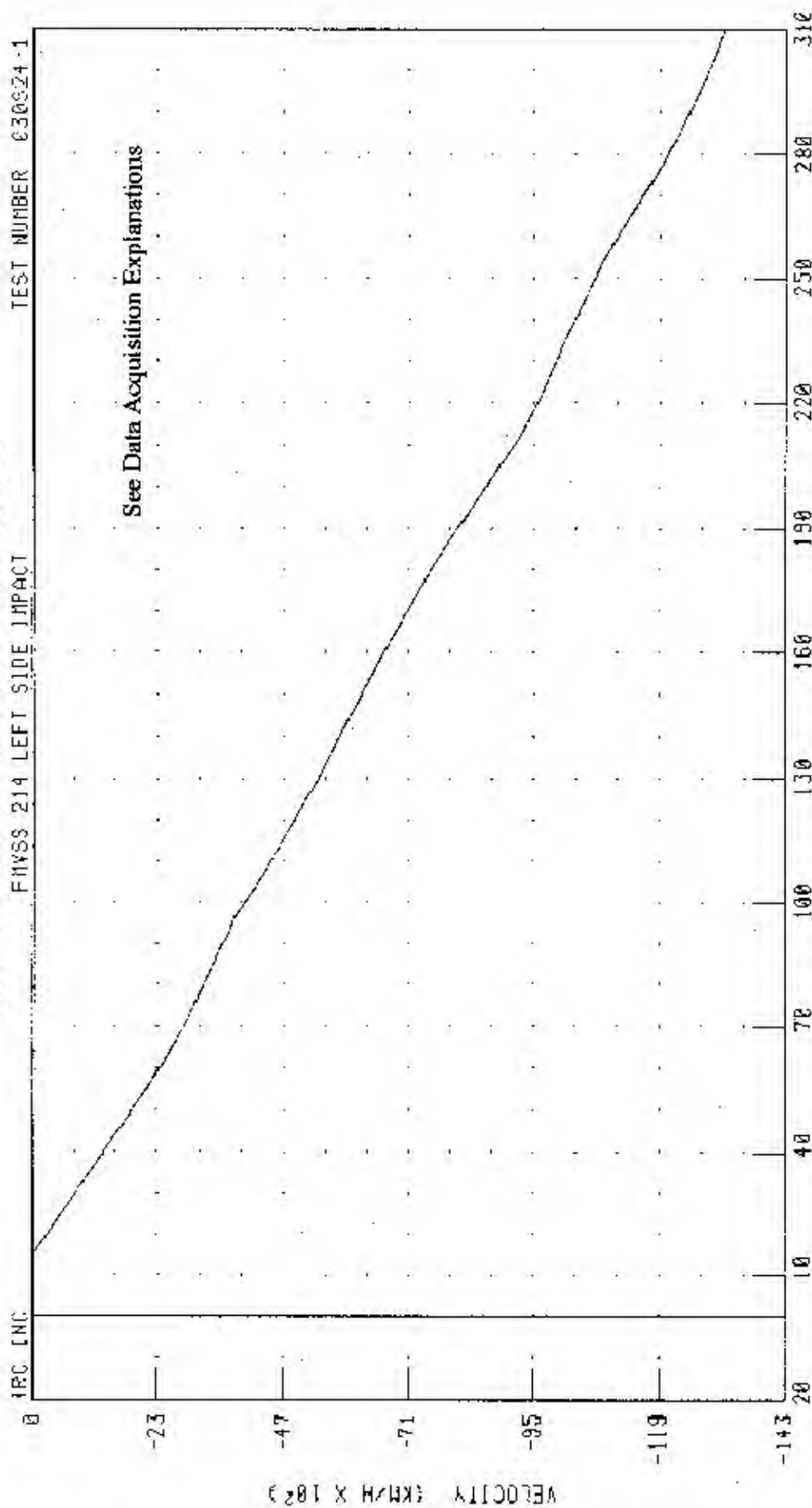
PEAK DATA: 129 35 G 6 7 04 MS; -1384 64 G 8 19 52 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 FORD EX33A

LEFT SIDE STILL AT FRONT SEAT Y-AXIS VELOCITY

TEST NUMBER 030924-1

FMVSS 214 LEFT SIDE IMPACT

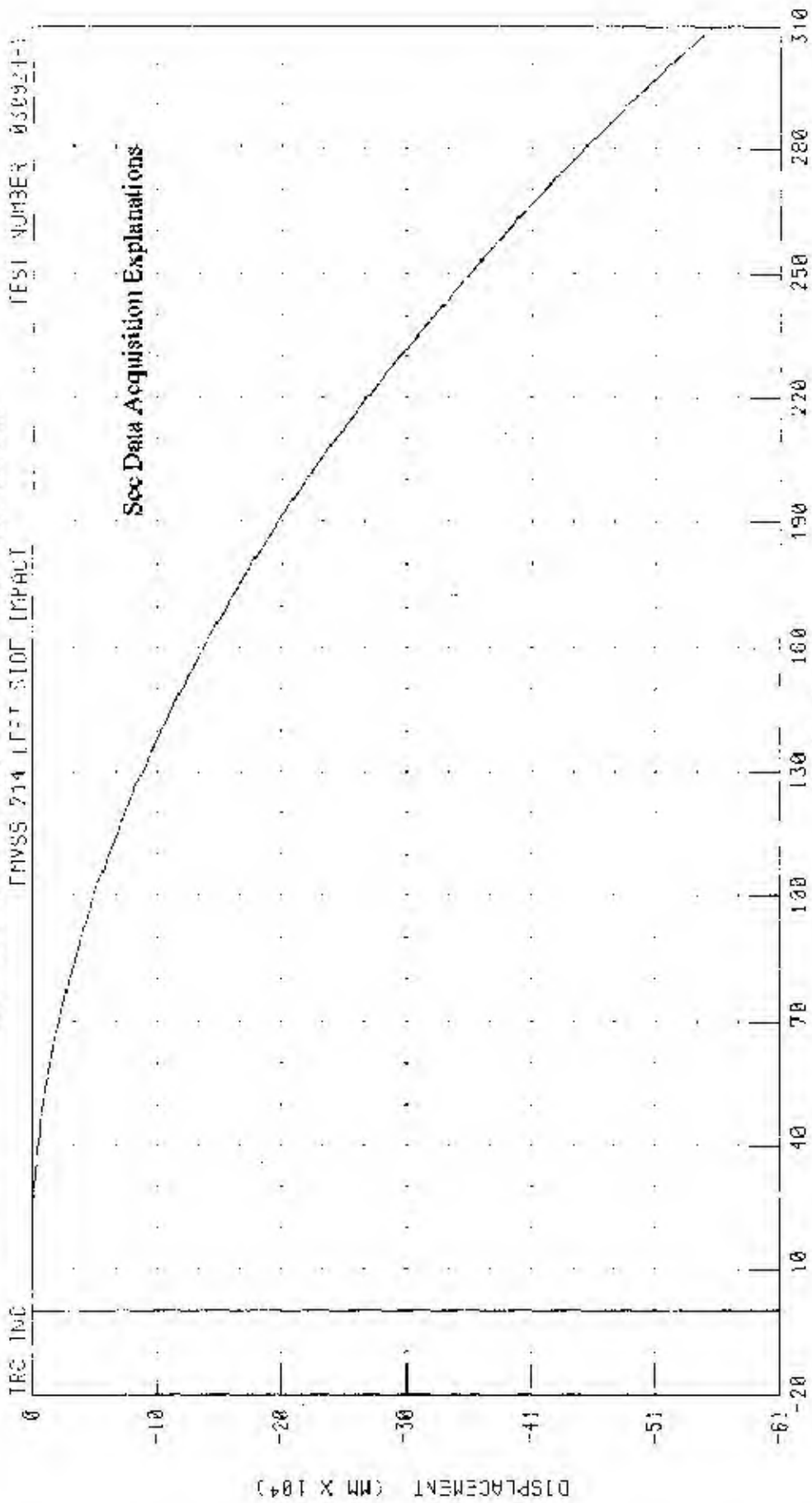


CHANNEL LFSYV1 FILTER CH. CLASS 130
PEAK DATA 26.57 KM/H @ 11.84 MS; -13235 29 KM/H @ 310.00 MS

55/26 27H 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2024 FOCUS RX350

LEFT SIDE SILL AT FRONT SEAT V-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER 030924-1



See Data Acquisition Explanations

TIME (MS)

PEAK DATA: 51.04 MM @ 15.36 MS; -562532 44 77 @ 310.00 MS

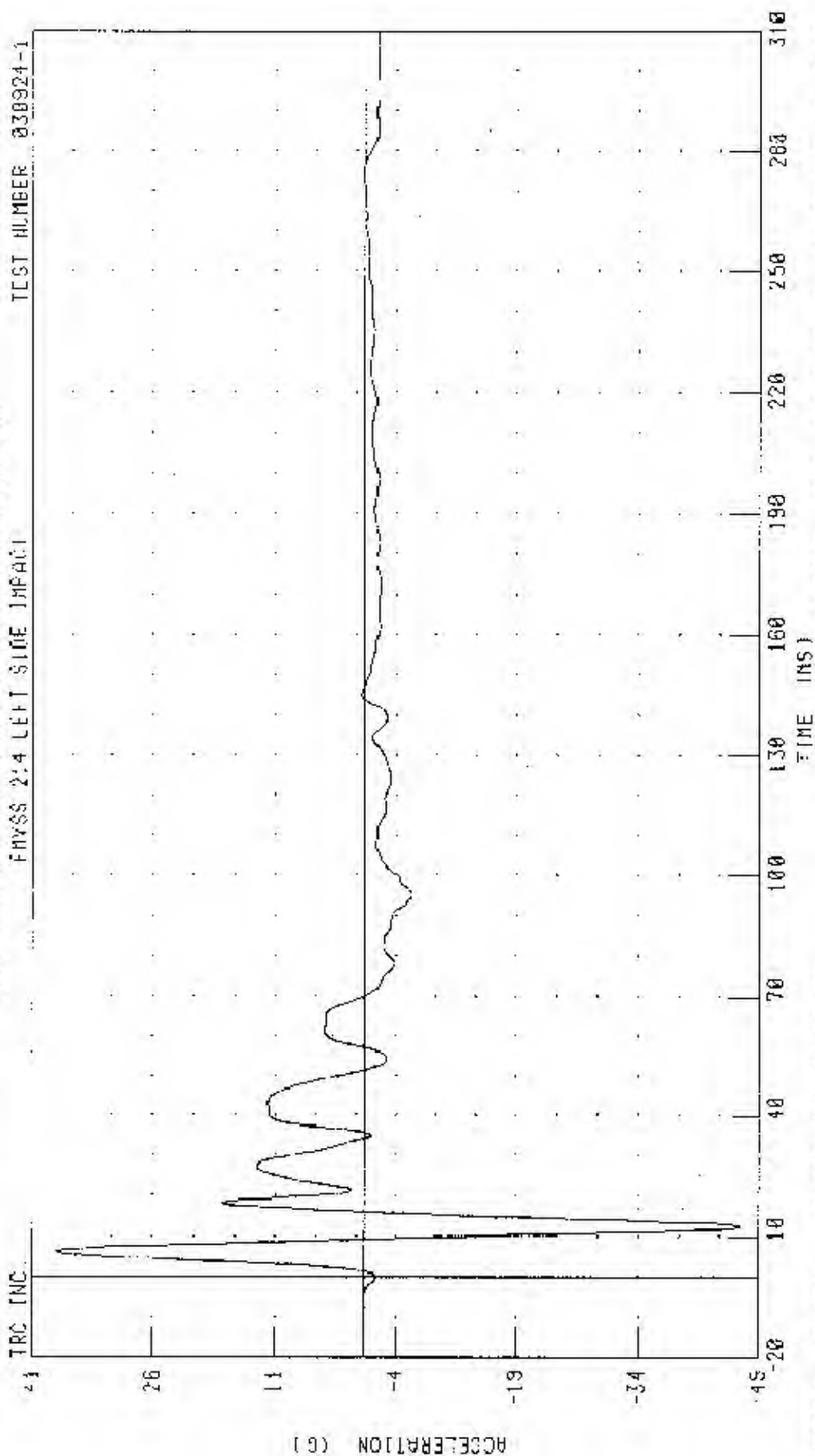
CHANNEL: LFSYD1 FILTER: CH. CLASS 100

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT SIDE STILL AT REAR SEAT Y-AXIS ACCELERATION

FRVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



CHANNEL: LRSYG1 FILTER: CH CLASS: 60

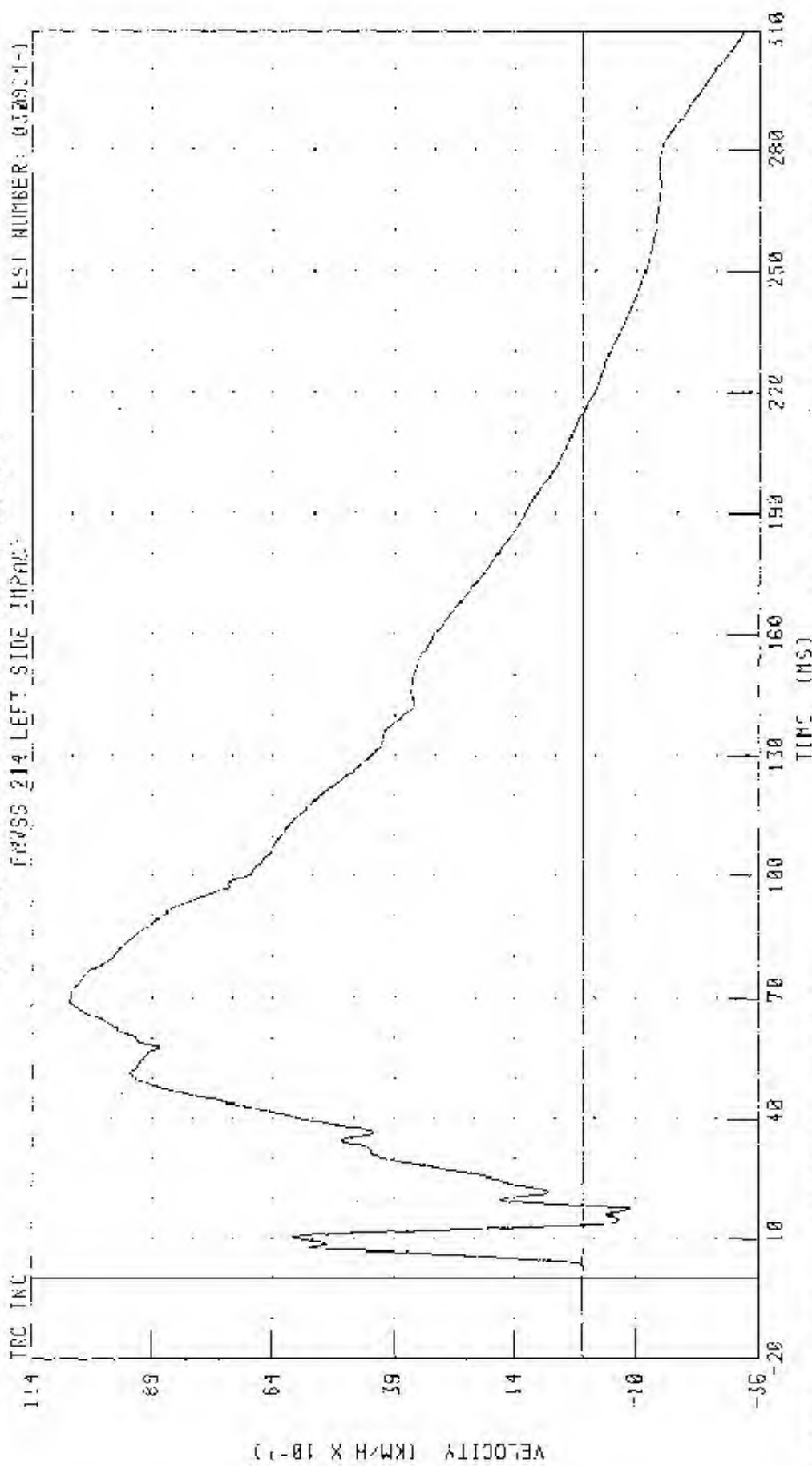
PEAK DATA 38 11 00 6 16 MS; -46 90 0 12.48 MS

55/25 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX350

LEFT SIDE BIL IN REAR SEAT Y-AXIS VELOCITY

CROSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



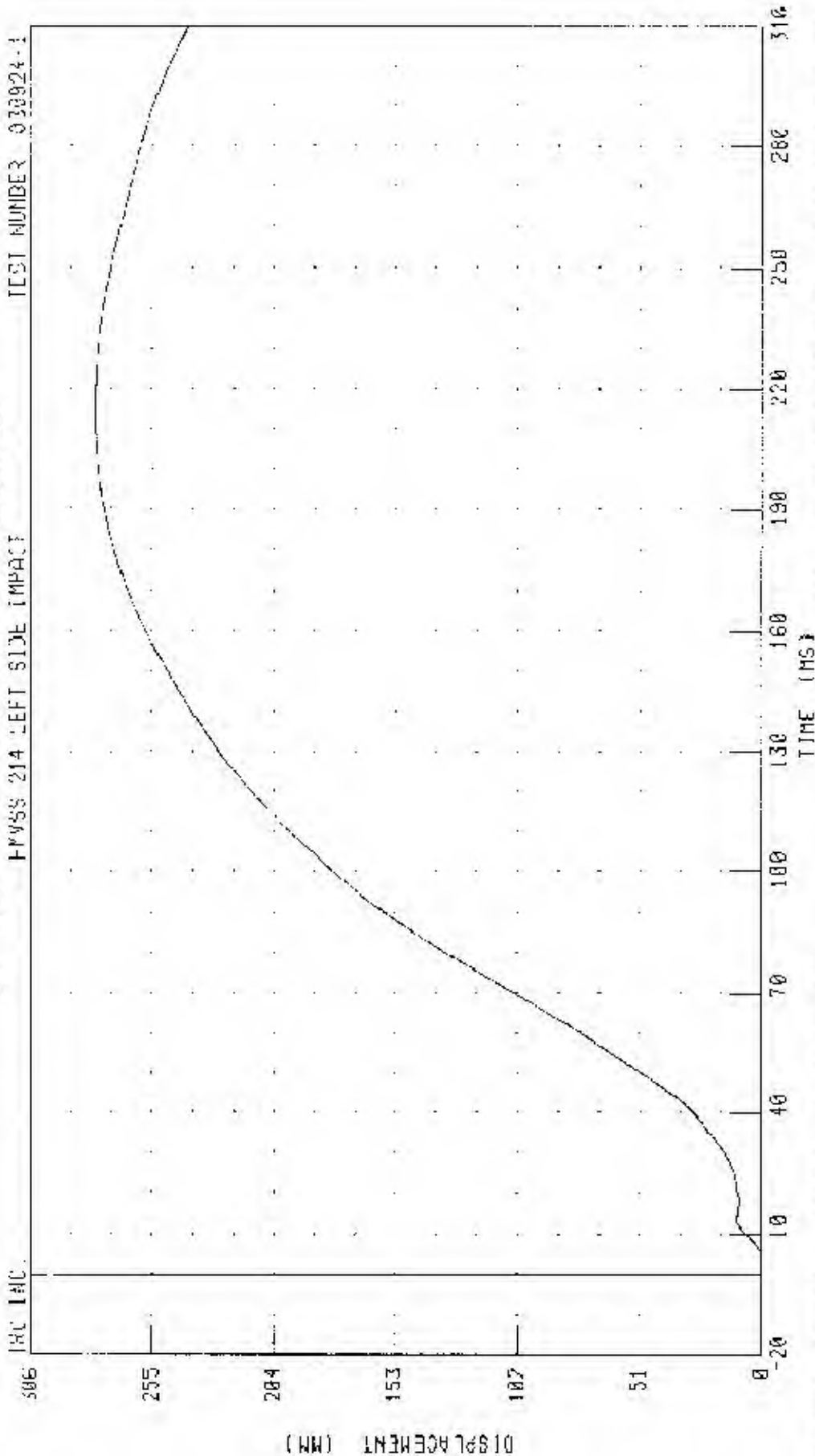
CHANNEL: EXSYV1 FILTER: CH CLASS 130

PEAK DATA 10 62 KM/H @ 69 29 MS, 3 32 KM/H @ 310 00 MS

55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER; INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT SIDE STILL AT REAR SENT Y-AXIS DISPLACEMENT

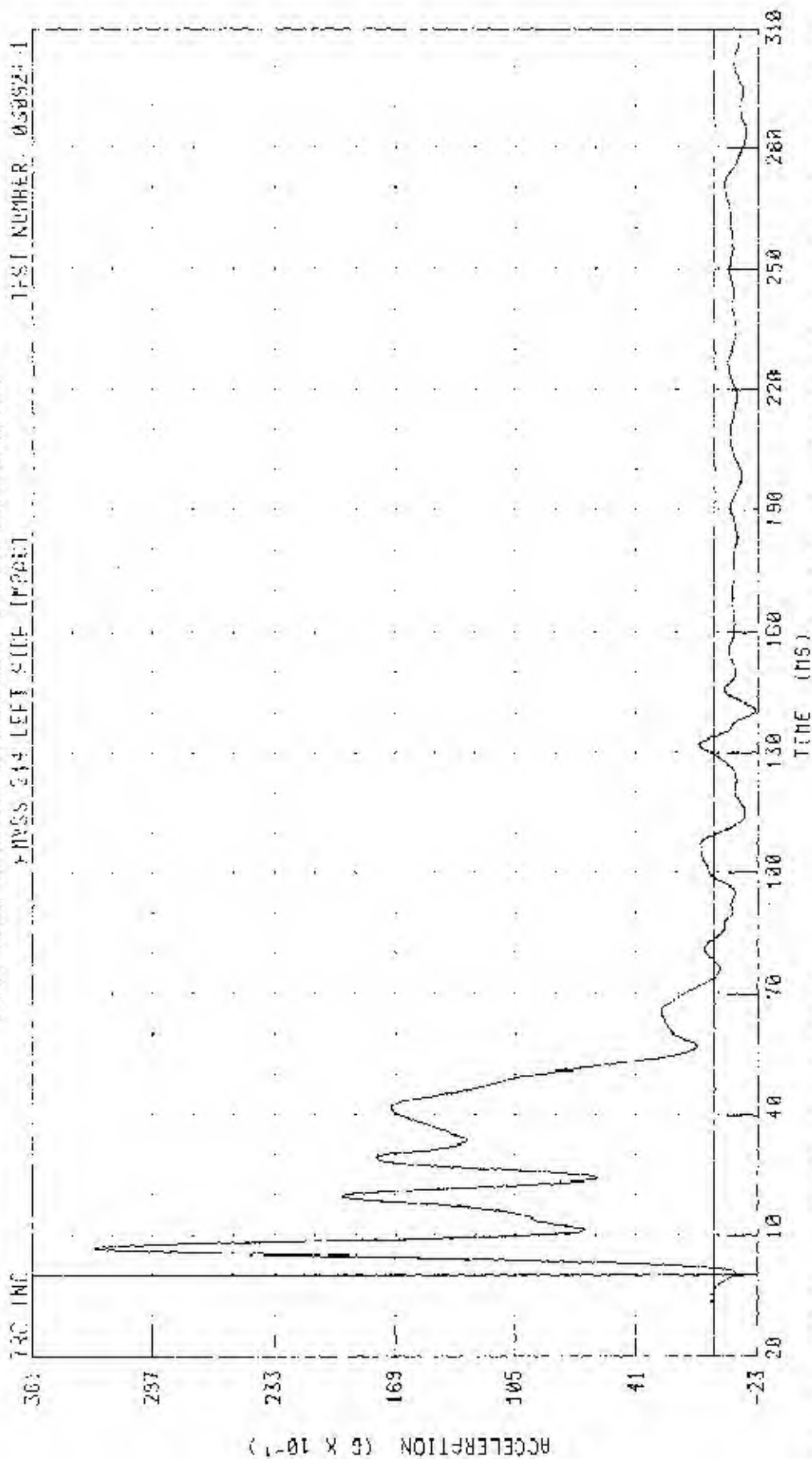
FMVSS 214 LEFT SIDE IMPACT TEST NUMBER 030924-1



CHANNEL: LRSYD1 FILTER: CH CLASS: 180

PEAK DATA 278.91 MM @ 215.36 MS; -0.01 MM 3.60 MS

55/20 4Pa 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE CARRIER) INTO LEFT SIDE OF 2004 LEXUS RX (R)
 RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION



PEAK DATA: 32.82 0 0 0.80 MS -2 17 0 0 140 58 MS

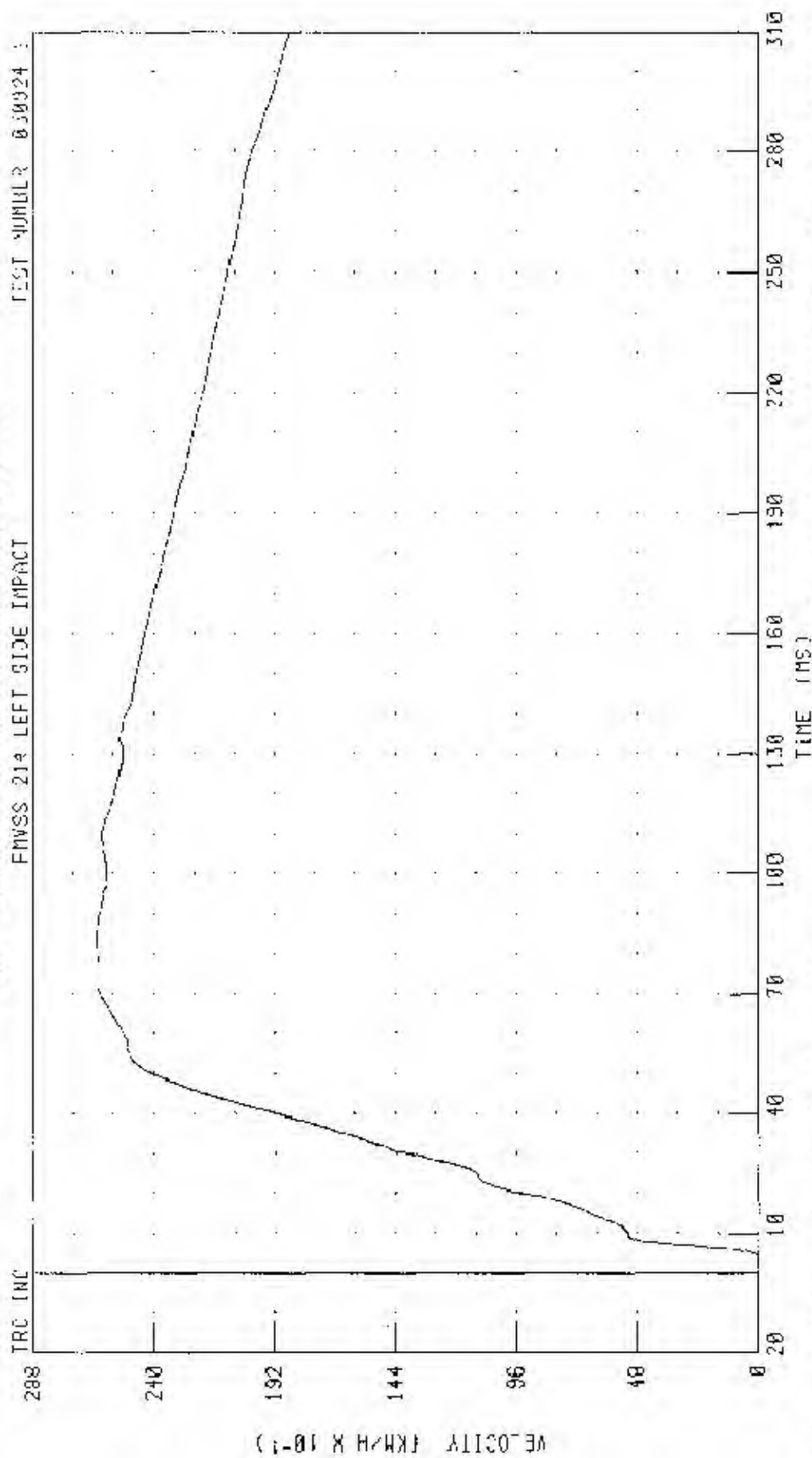
CHANNEL: RRTYCH FILTER: CH CLASS: 50

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



CHANNEL: BRTVV: FILTER: CH CLASS 180

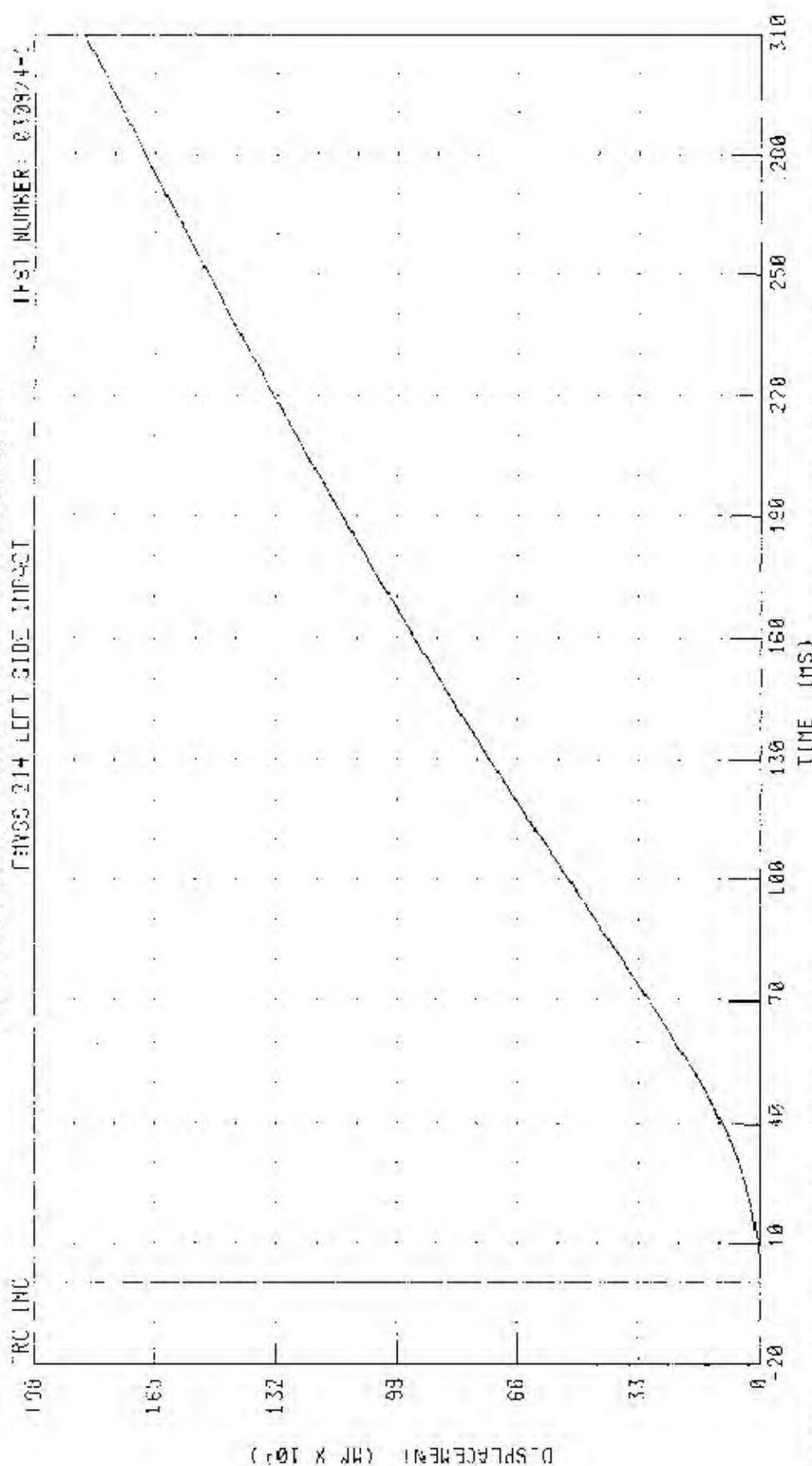
PEAK DATA 26.26 KPH @ 83.04 MS, 0.00 KPH @ 3.28 MS

55-26 KM 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT

TEST NUMBER: 030924-1

FMVSS 214 LEFT SIDE IMPACT



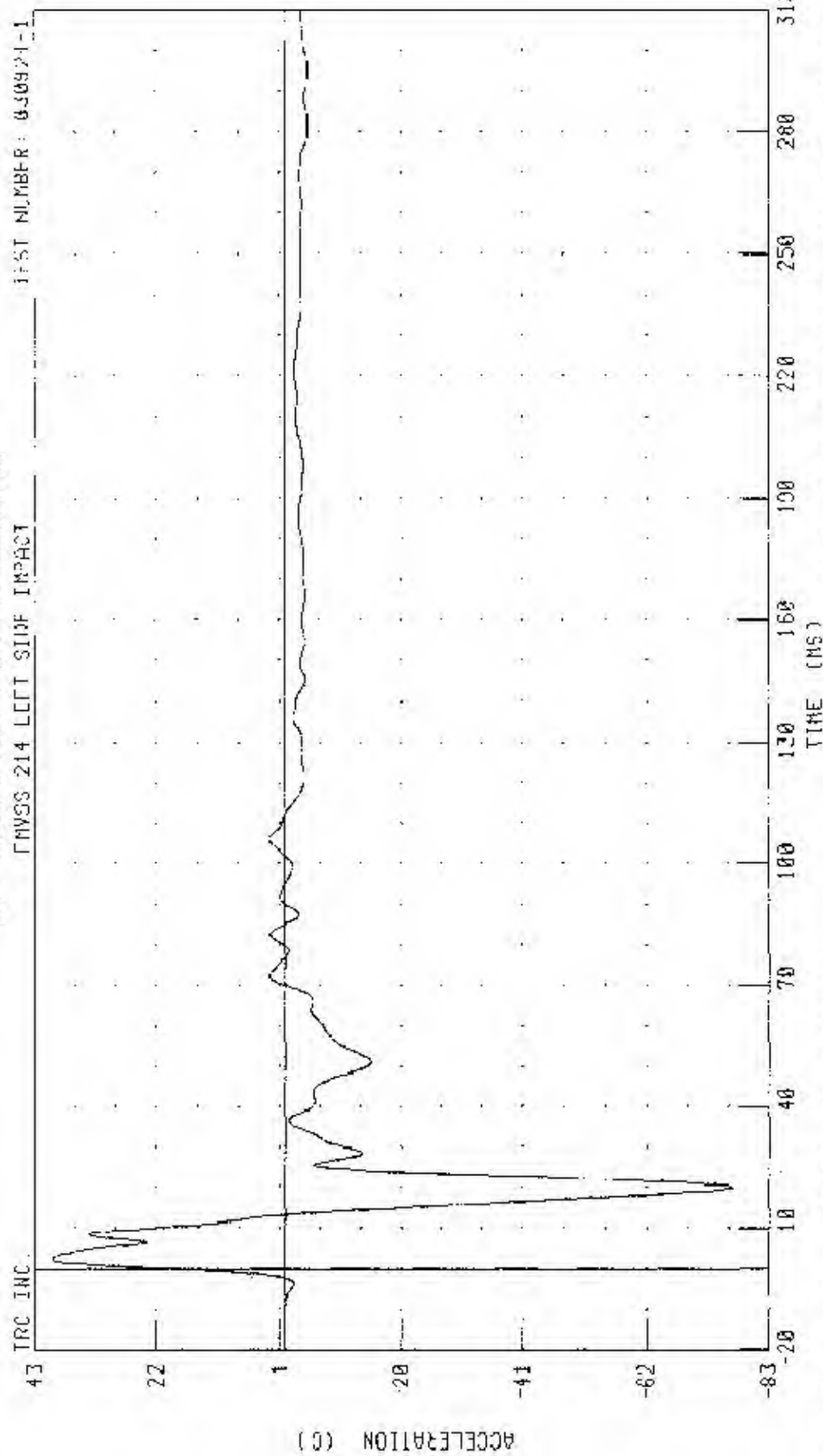
PEAK DATA: 1840.52 MM @ 310.00 MS, 0.00 MM @ 0.00 MS

CHANNEL: ROTYD1 FILTER: CH CLASS 180

35/26 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 EXUS RX330

LEFT LOWER A-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030924-1



CHANNEL LAYC: FILTER: CH: CLASS: 60

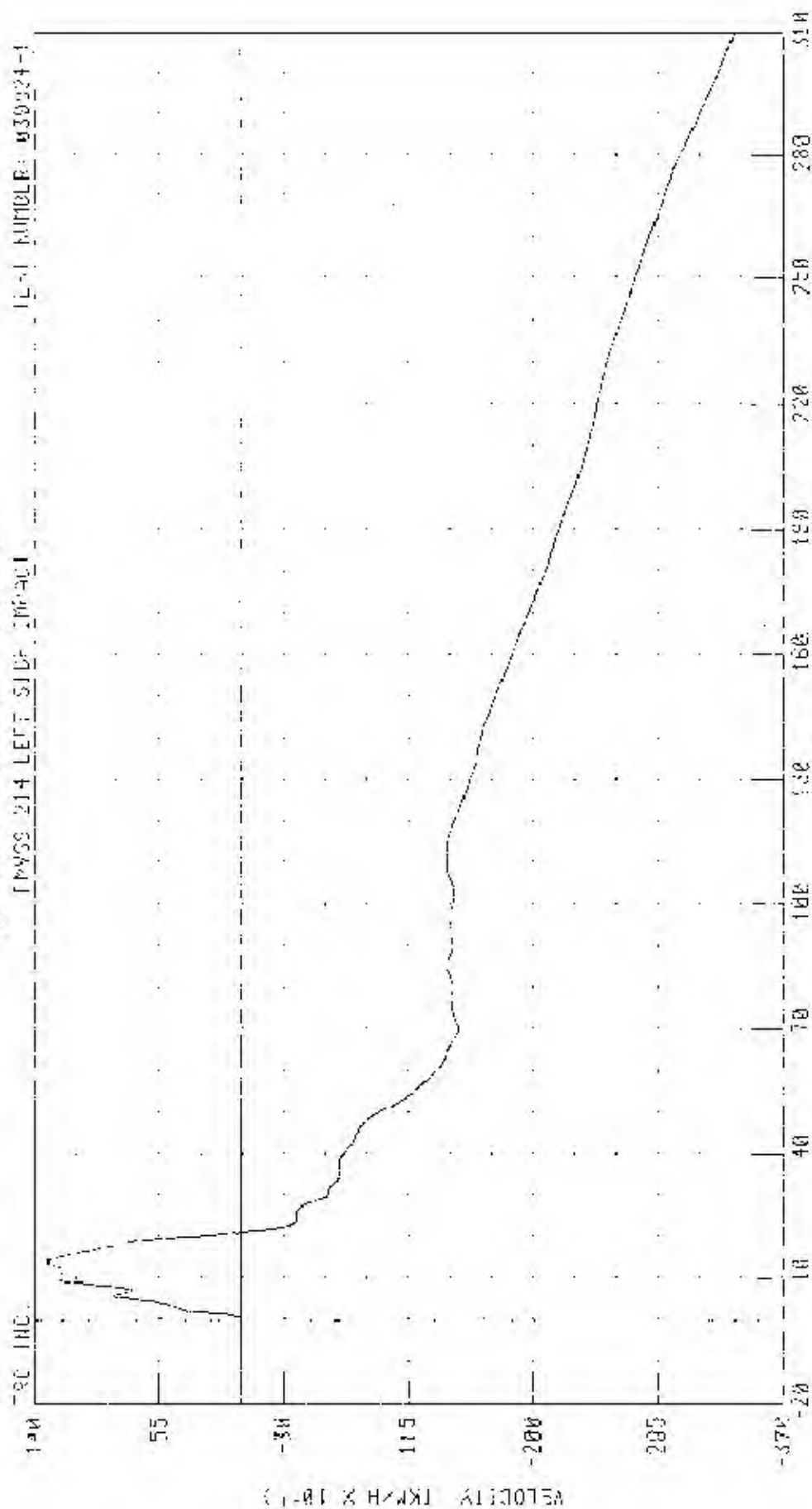
PLAK DATA: 39 99 G @ 2 24 MS, -76 55 G @ 19 92 MS

05:20 ZPH: 00 DEGREE SLUG IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF ROAD - EXOS EX330

LEFT LOWER A-POST Y-AXIS VELOCITY

IMPSS 214 LEFT SIDE IMPACT

LEFT NUMOLE: 030924-1



TIME (MS)

PEAK DATA: 17 KM/H @ 14 00 MS, -33 72 KM/H @ 310 00 MS

CHAYNFC 14:29:11 FILTER: CH, CLASS 160

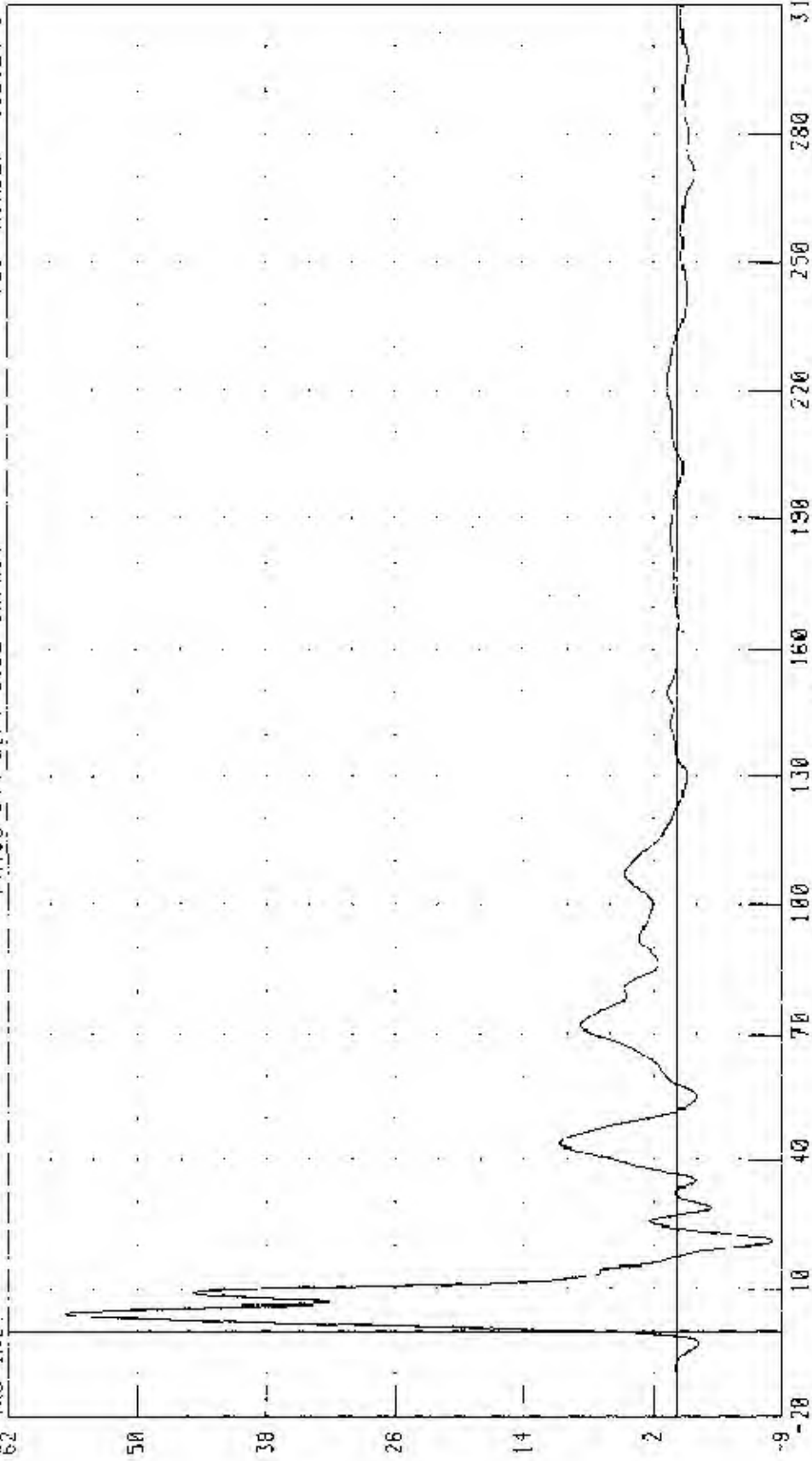
55/28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX350

LEFT MIDDLE 0 POST Y-AXIS ACCELERATION

TEST NUMBER 030924-1

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



TIME (MS)

CHANNEL: LMPYC1 FILTER: CH CLASS: 50

PEAK DATA: 57.03 G @ 4.40 MS, -R 83.0 @ 21.20 MS

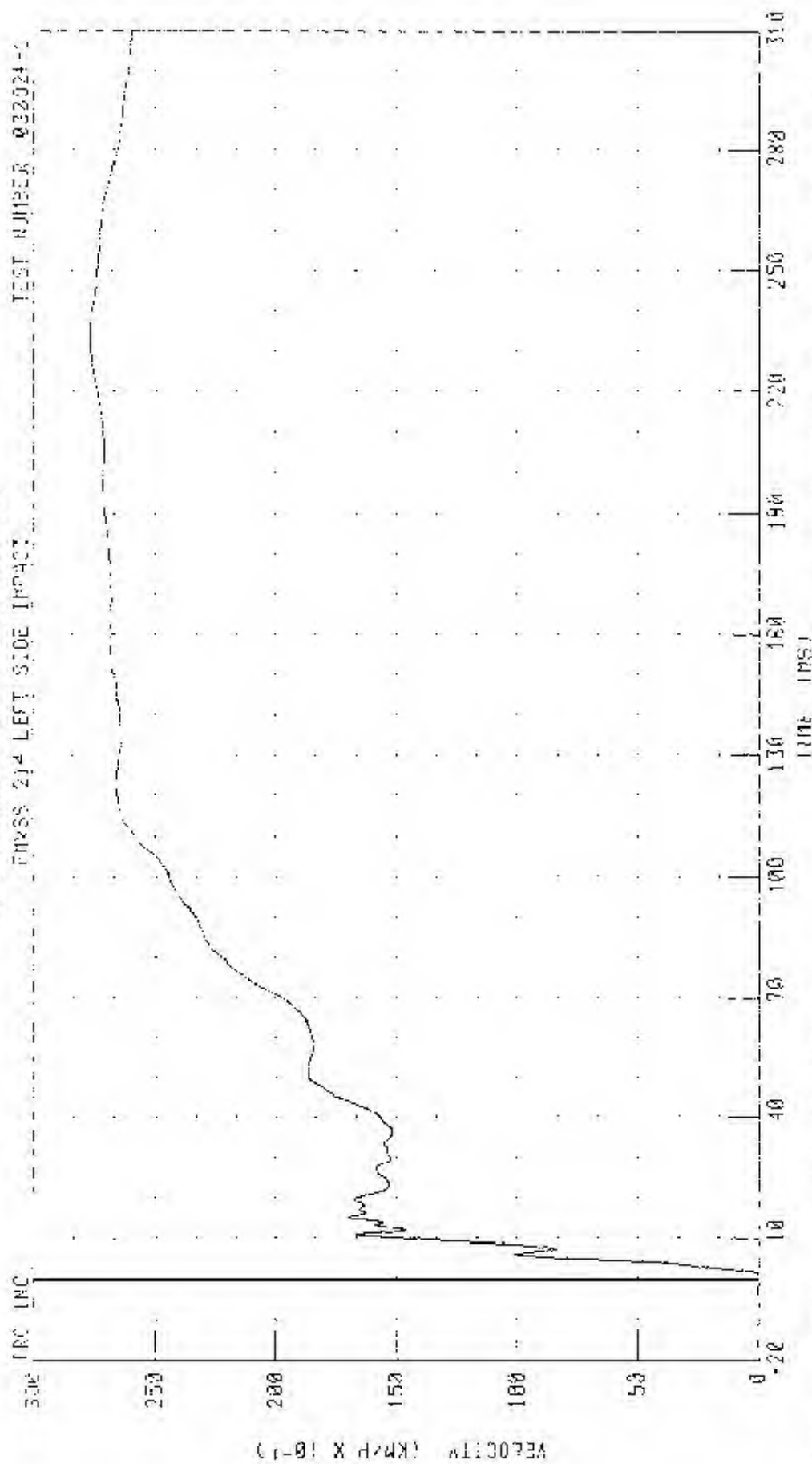
ACCELERATION (G)

57/23 CRASH SIDE IMPACT MOVING DECELERATION BARRELS INTO LEFT SIDE OF 2005 FORD EX332

LEFT FRONT POST Y AXIS VELOCITY

PHYS 214 LEFT SIDE IMPACT

TEST NUMBER 032024-1

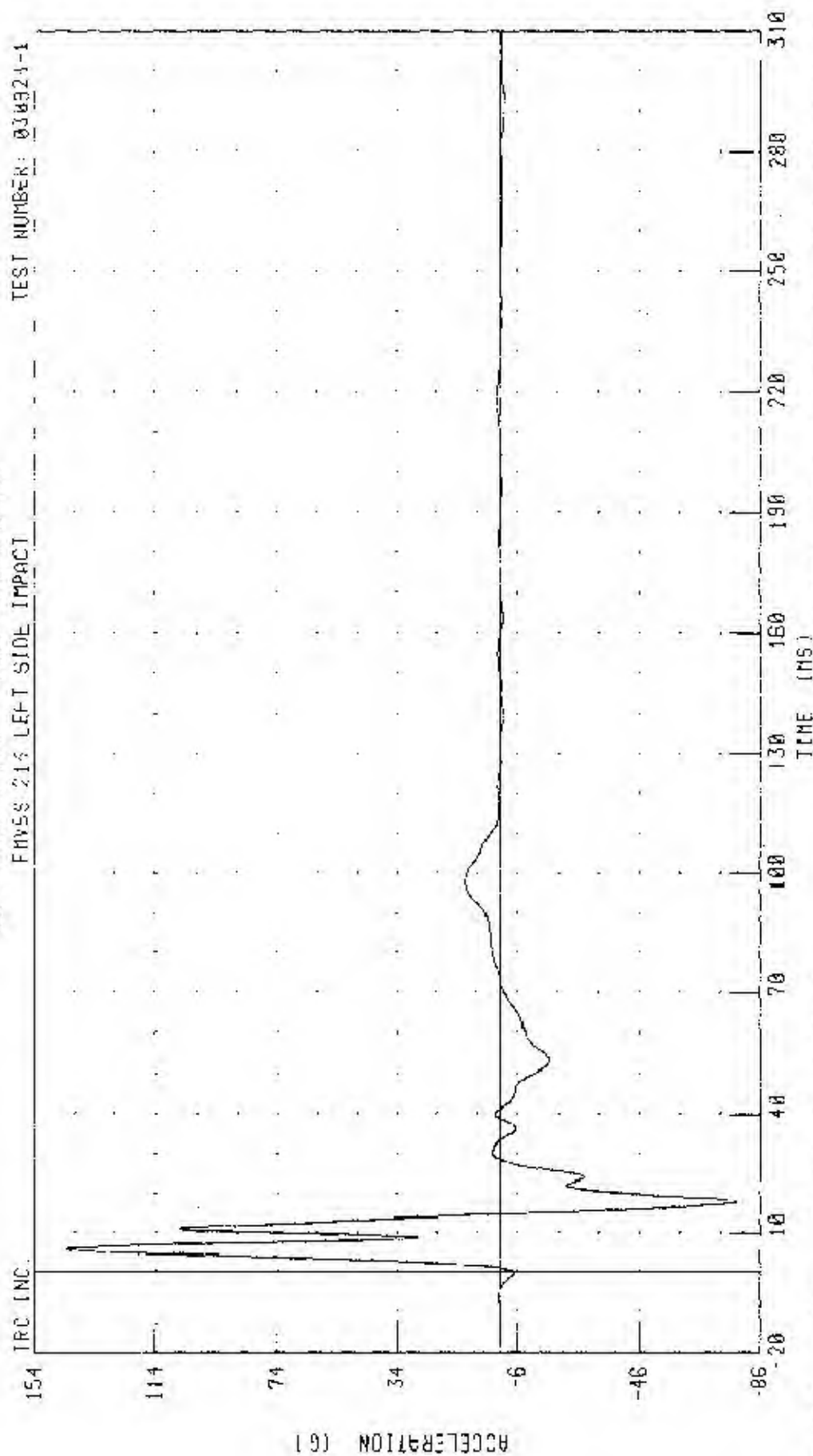


CHANNEL LMHYV1 FILTER CH CLASS 120

PEAK DATA 27.66 KM/H @ 234.00 MS, -0.06 KM/H @ 0.00 MS

55/20 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT LOWER B-POST V-AXIS ACCELERATION



CHANNEL: LBVC1 FILTER: CH CLASS: 60

PEAK DATA: 143.64 @ 5.92 MS, 78.34 @ 18.00 MS

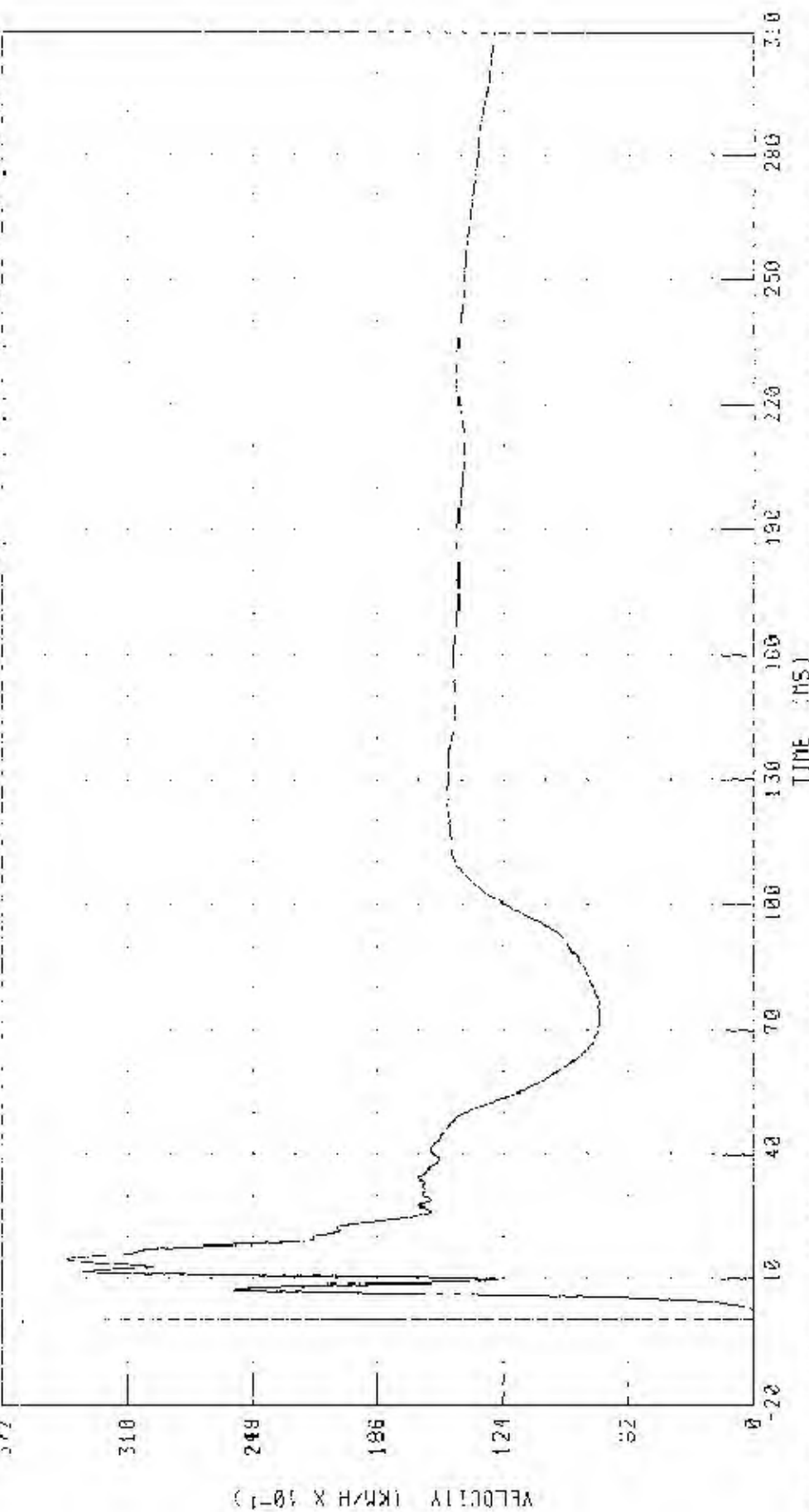
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEA) COVER 0-POST Y AXIS VELOCITY

FINISH 214 LEFT SIDE IMPACT

TEST NUMBER: 010029-1

TRC 140

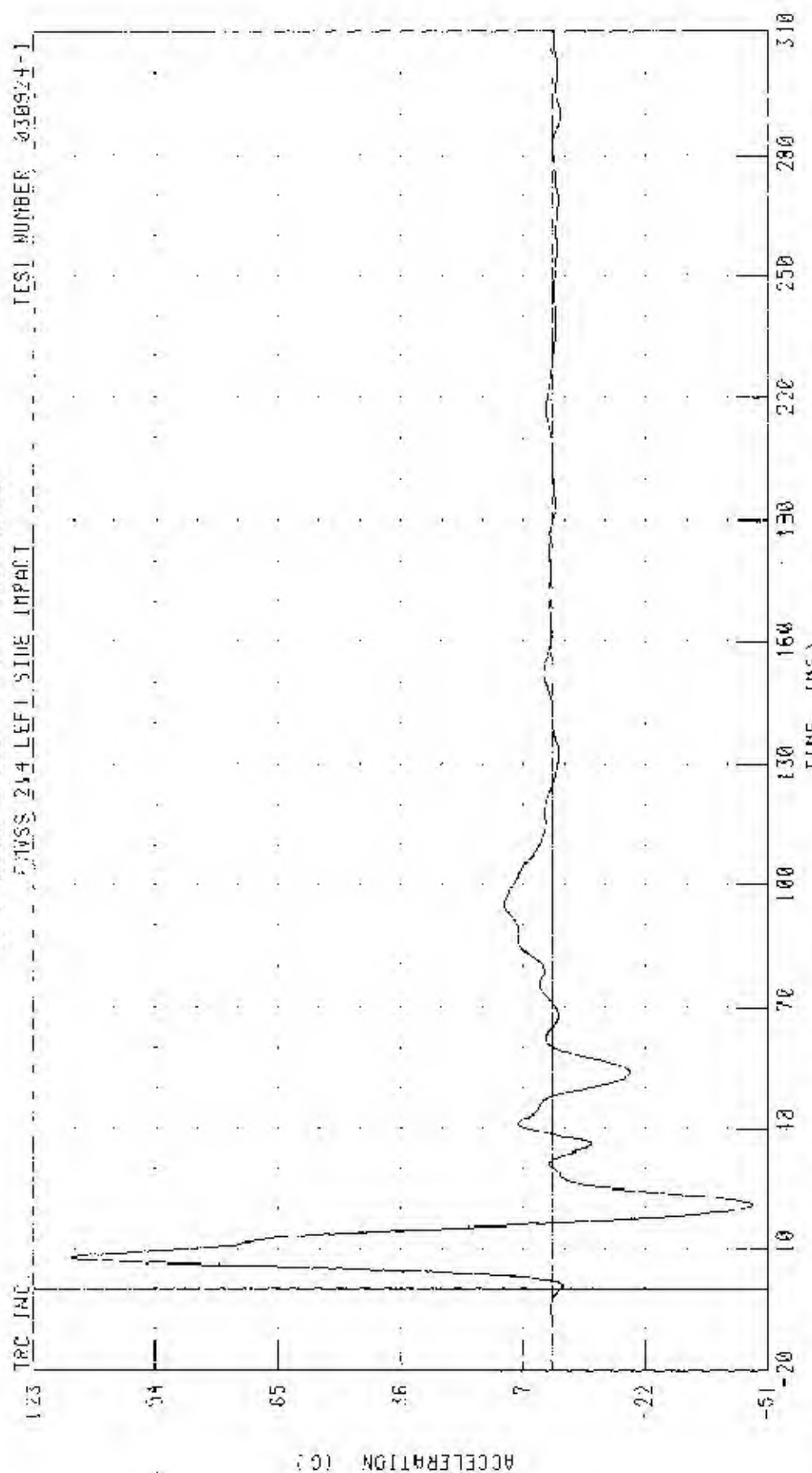


CHANNEL LIBRARY FILTER CH CLASS 190

PEAK DATA 34.06 KPH @ 14.58 MS, -3.01 KPH @ 1.94 MS

55-28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT MIDDLE B-PULSE Y AXIS ACCELERATION

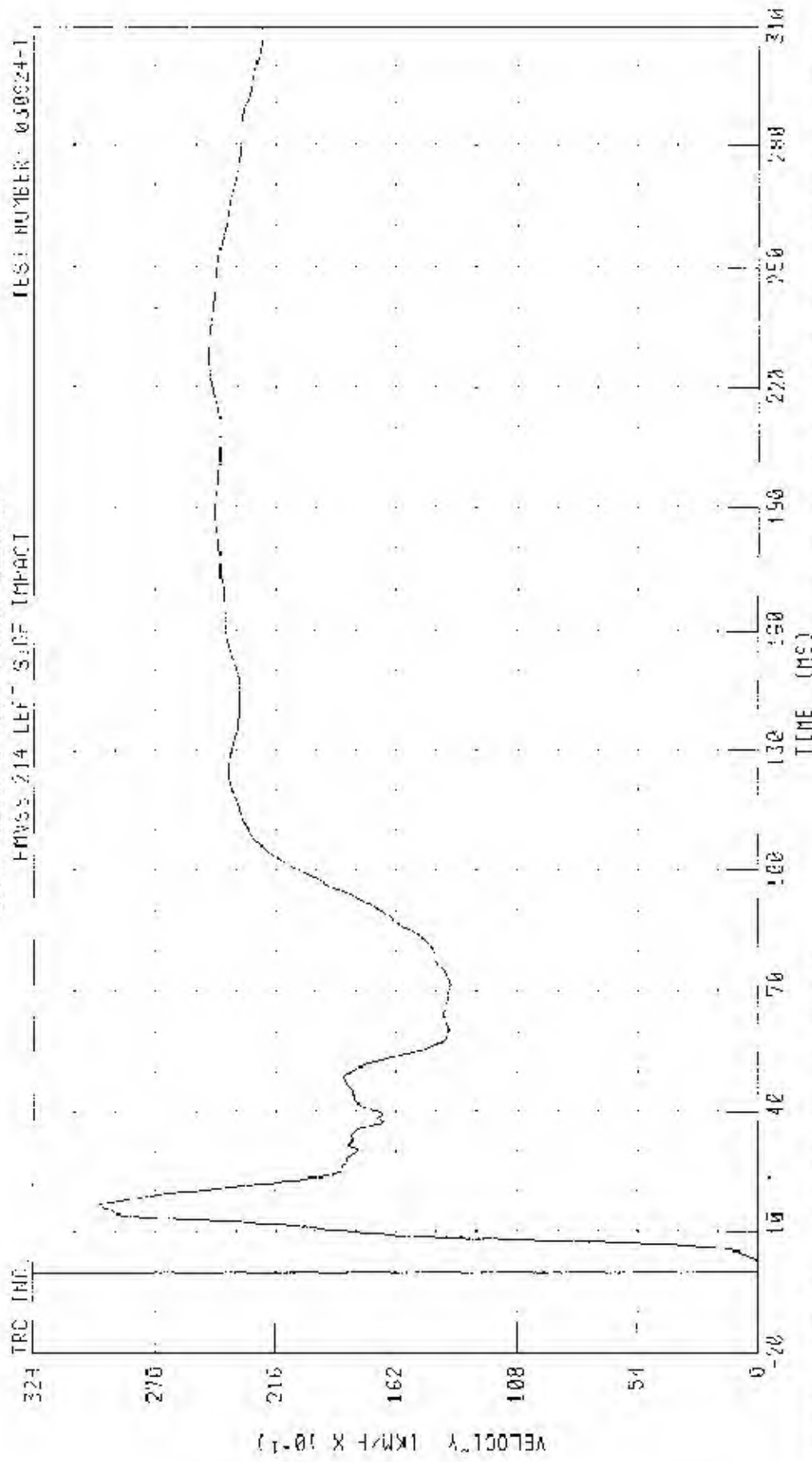


CHANNEL: LF8Y01 FILTER: CH CLASS: 50

PEAK DATA 114 21 0 8 7 97 15, -47 27 0 6 20 72 MS

55/28 KPH 96 RECORD STOP IMPACT (CRASH) REFORMER (BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT WHEEL B POST Y-AXIS VELOCITY



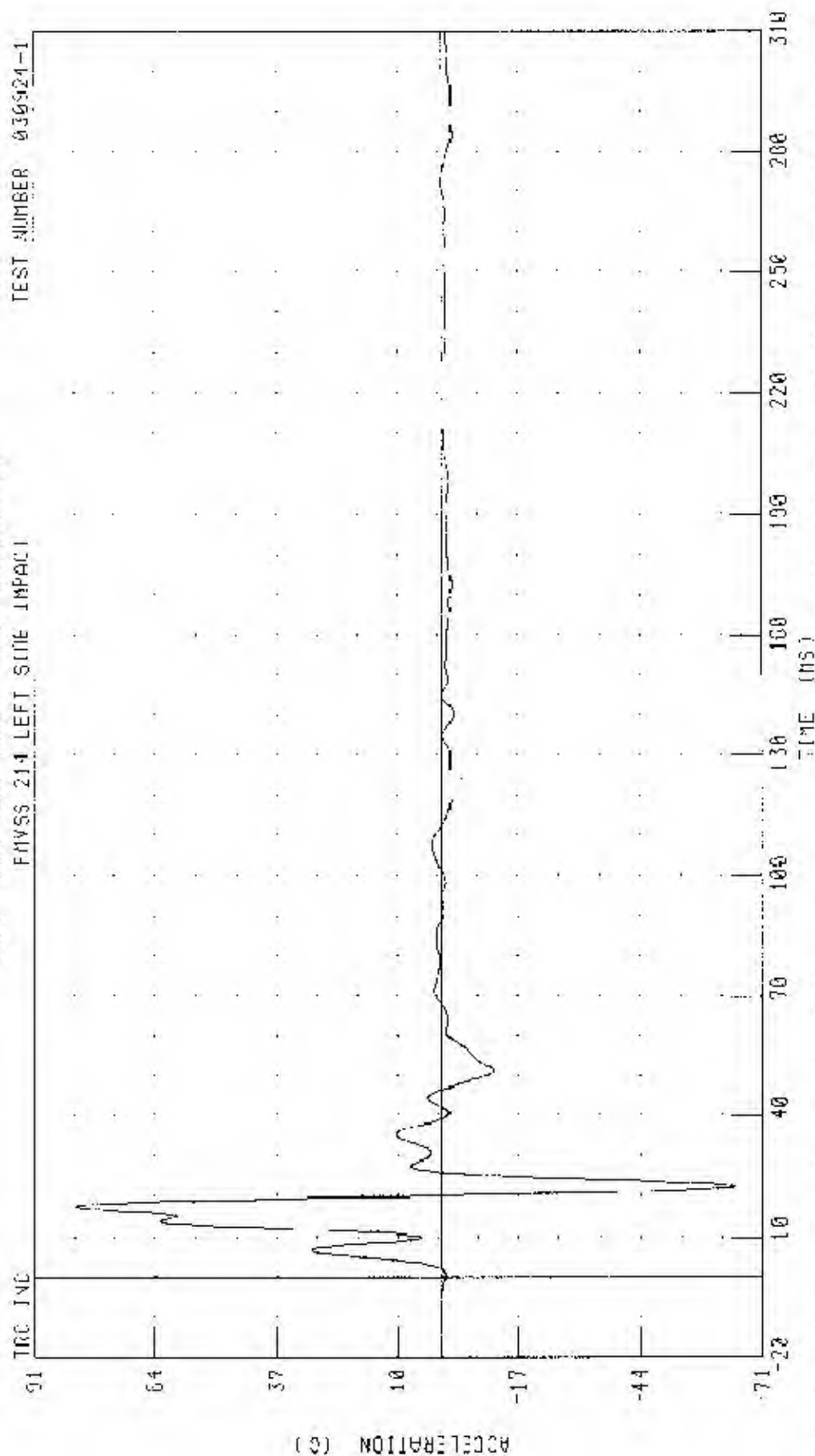
CHANNEL 1 MECHANICAL FILTER CH 0.453 180

30/26 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 FORD RX330

LEFT FRONT SEAT TRACK Y AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924-1



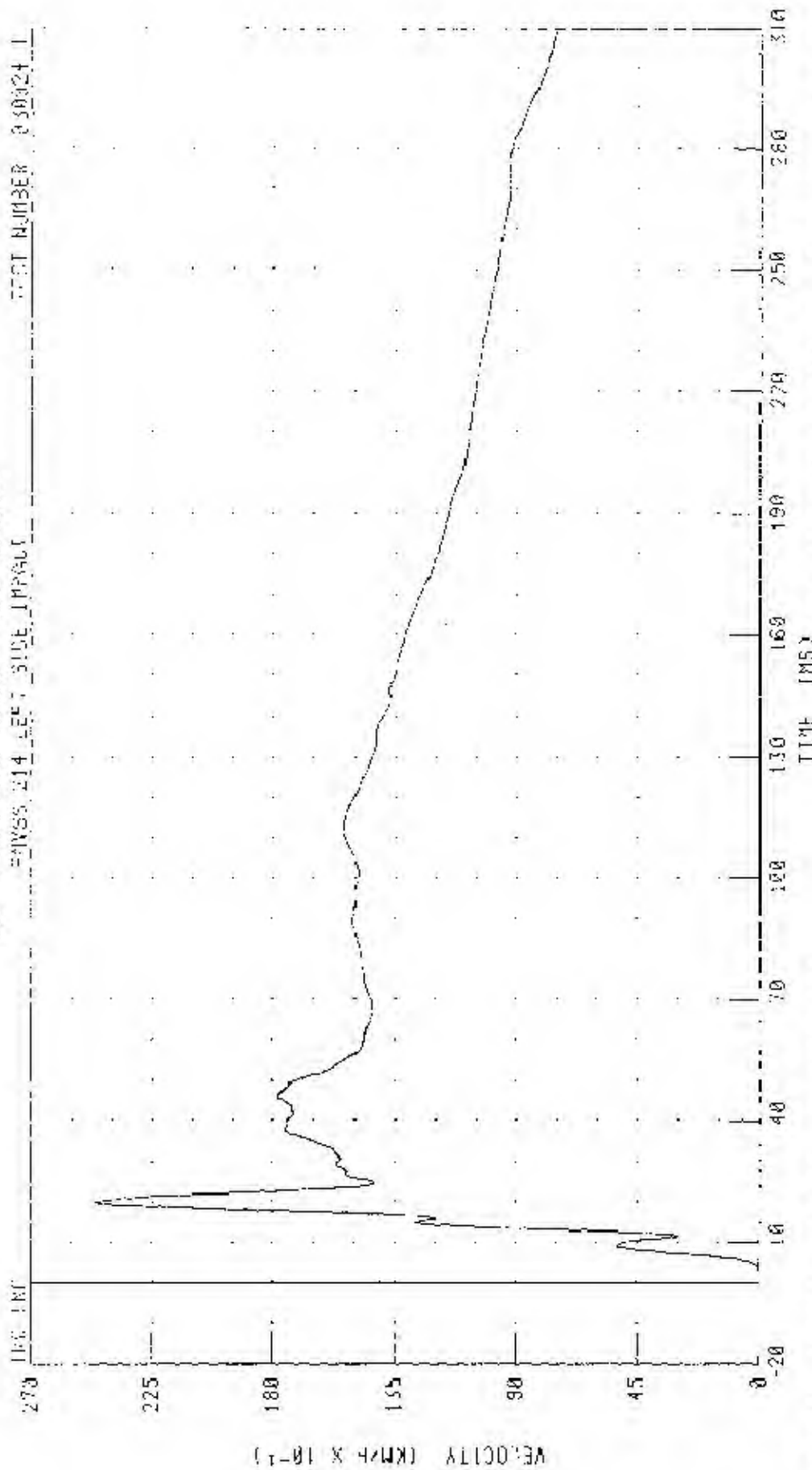
CHANNEL 1 (1/1) FILTER CH. CLASS 60

PEAK DATA 82.25 G @ 17.52 MS, -65.06 G @ 22.32 MS

55.00 MPH 90 DEGREE SIDE IMPACT MOVING OFFFORMELE HARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT FRONT SEAT TRACK Y-AXIS VELOCITY

TEST NUMBER 030924-1



CHANNEL: L1 (YV1) FILTER: CH CLASS 180

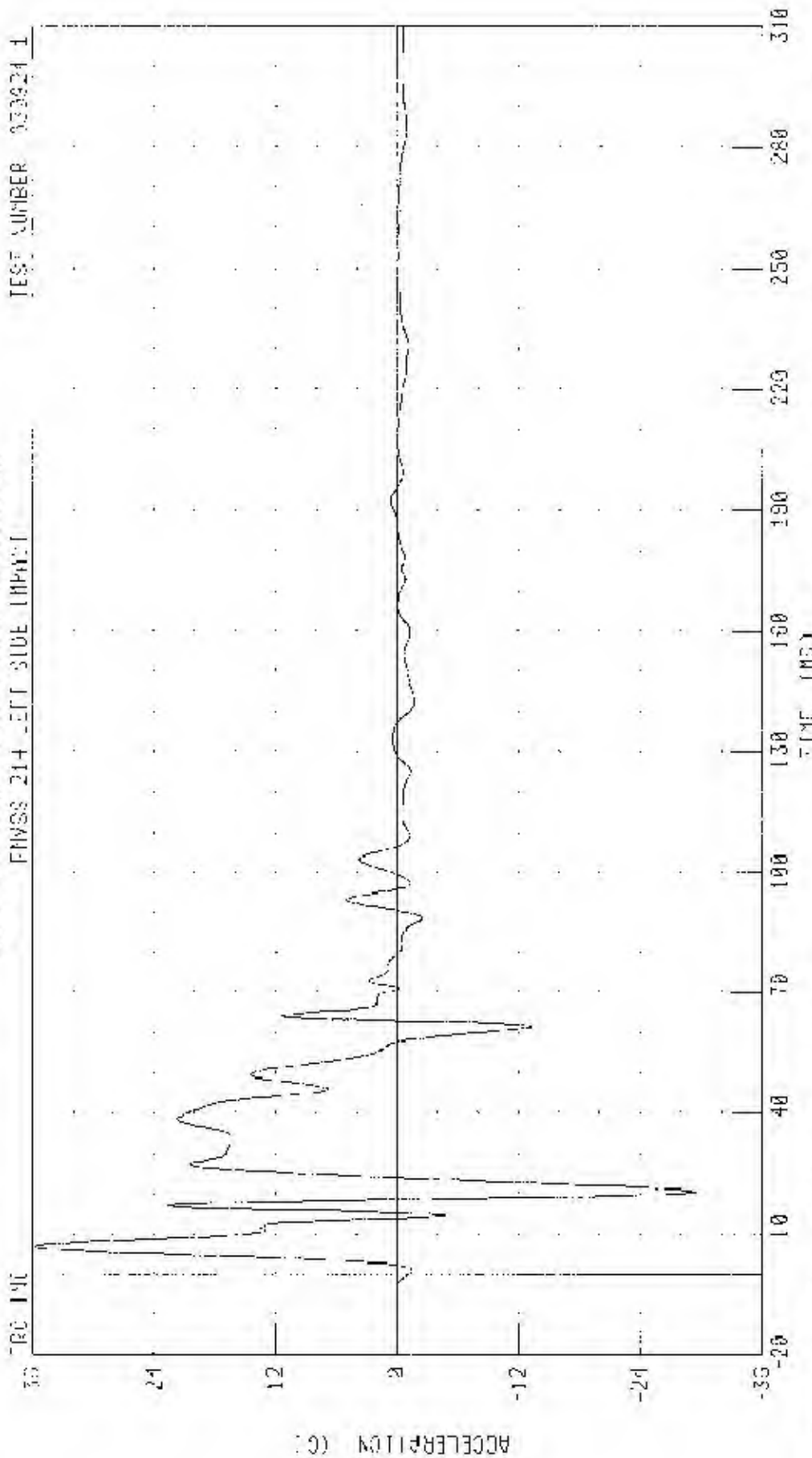
PEAK DATA 74.50 KM/H @ 19.84 MS, 0.02 KM/H @ 0.00 MS

55005 FPD 40 350KHz 3000 IMPACT MOVING DEFLECTOR BARREL - INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR SEAT TRACK Y-Axis ACCELERATION

TEST NUMBER 030924-1

FNVS 214 LEFT SIDE IMPACT



CHANNEL1 LEFTY01 FILTER: OFF GAIN: 00

PEAK DATA 35.77 G @ 7.04 MS; -29.14 G @ 20.56 MS

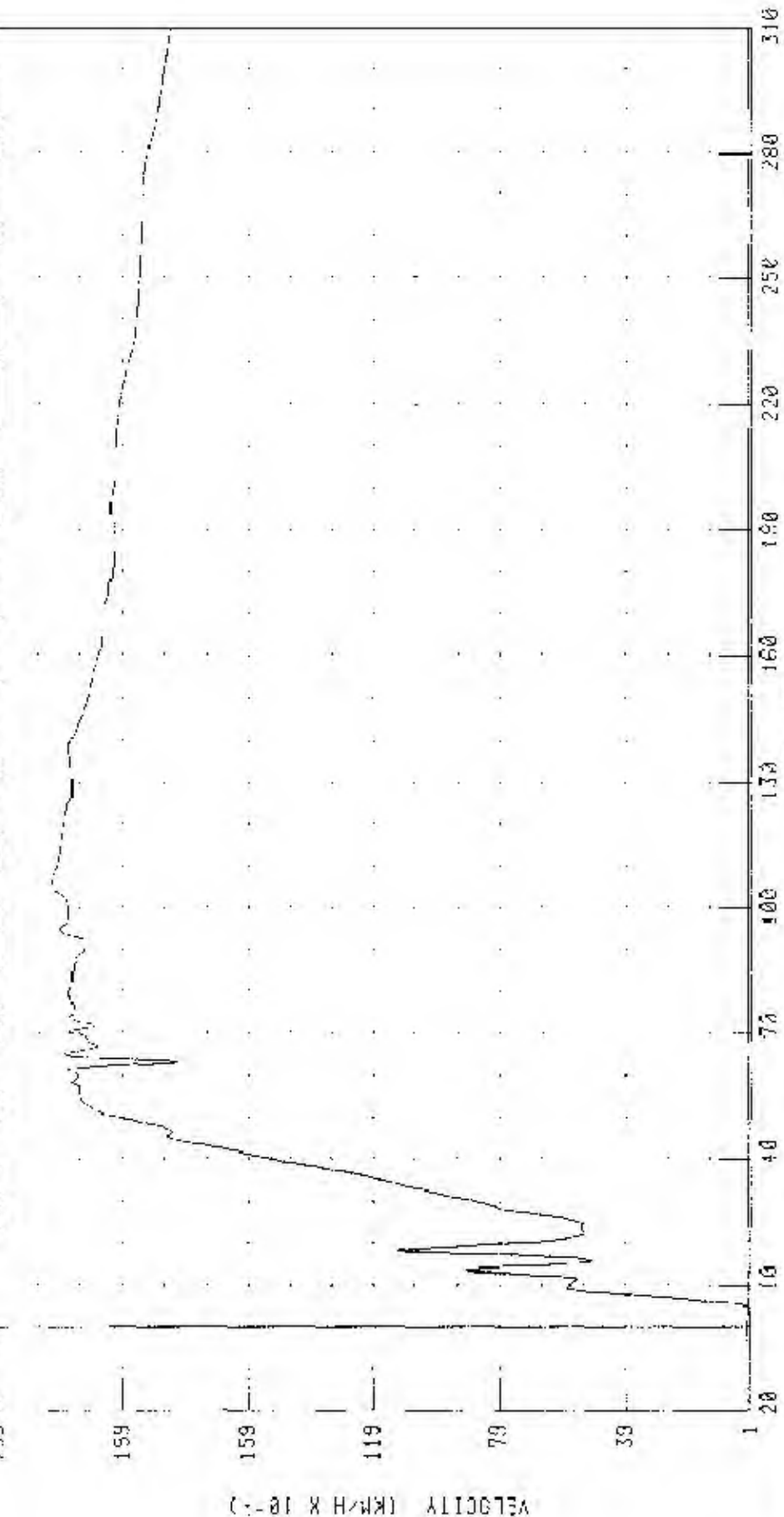
30000 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BAR EP: INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR SPIN TRACK X-AXIS VELOCITY

239 TRC INC.

FRSS 214 LEFT SIDE IMPACT

IPST NUMBER 030924-1



TIME INSI

CHANNEL LRTY1 FILTER CH CLASS 180

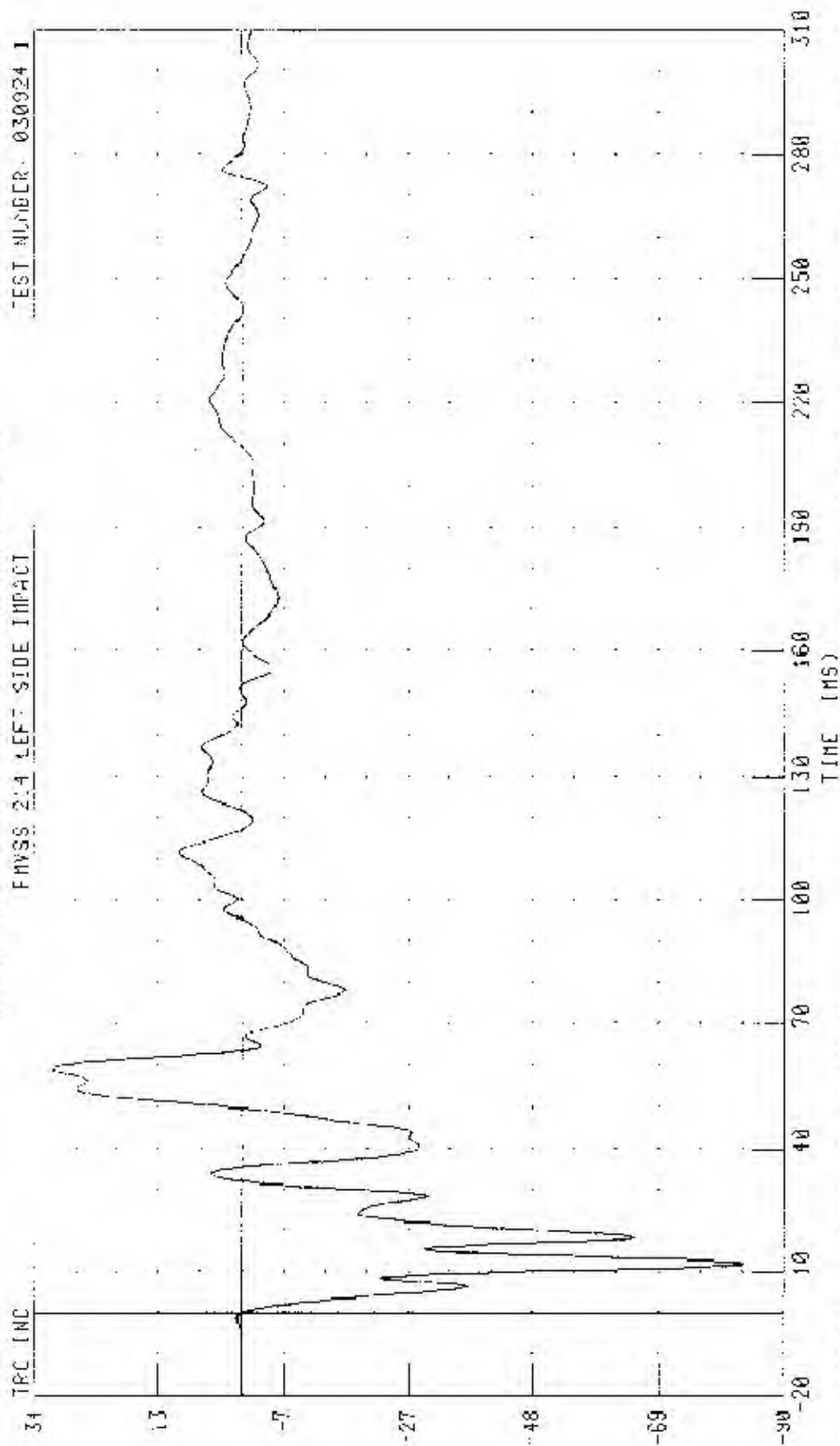
PEAK DATA 22 15 KPH @ 105 52 NS, -6 12 KPH @ 4 24 MS

35/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

FRVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924

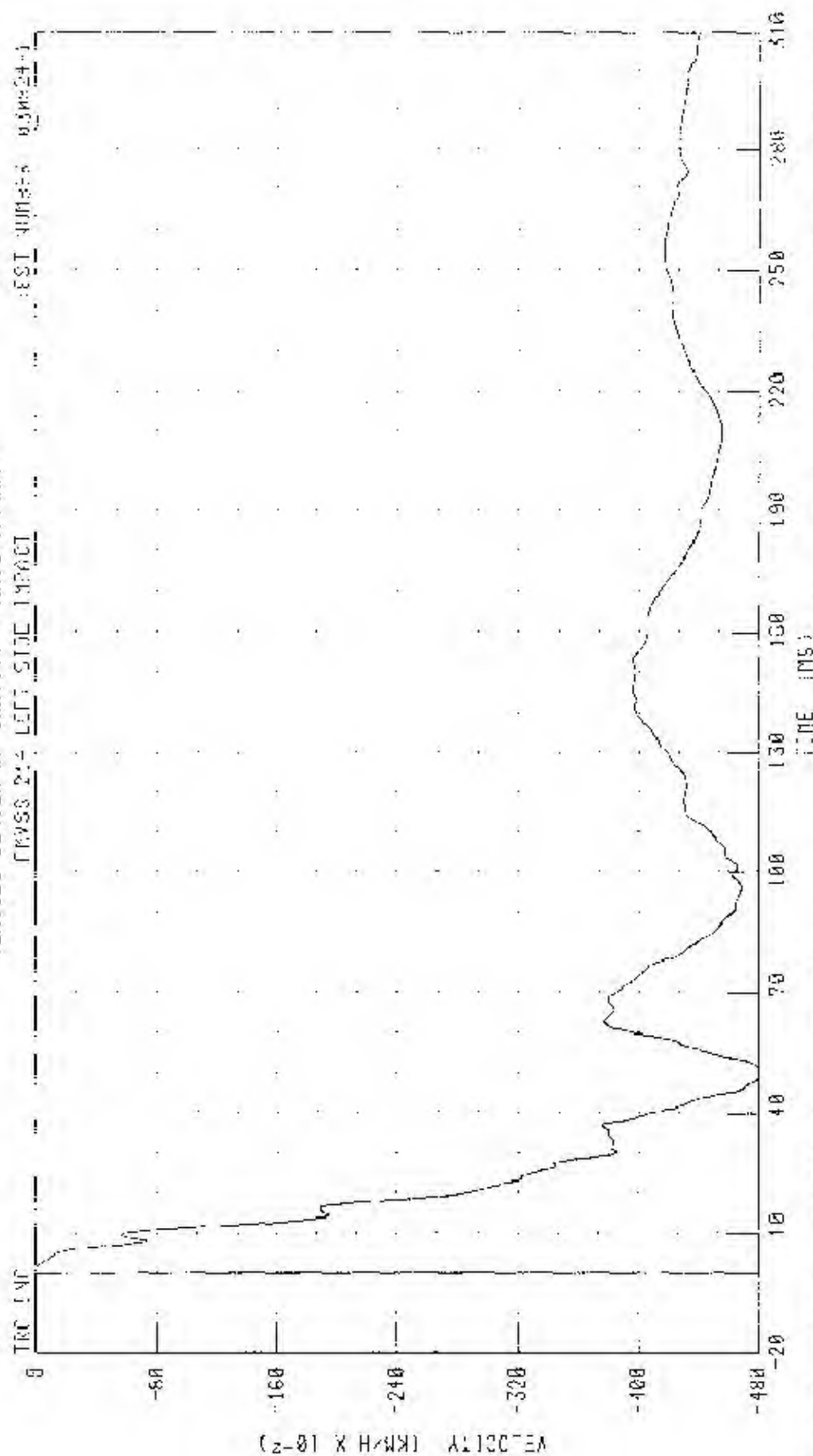


CHANNEL: VCGAC1 FILTER: CH CLASS: 60

PEAK DATA: 3 21 0 0 39 20 MS, -8 41 0 0 12 00 MS

55.20 KPH 50 DEGREE 8100 IMPACT MOVING DEFORMED F RERNIER INTO LEFT SIDE OF 2004 LEXUS RX350

VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY



CHANNEL VCDXV1 FILTER CH CLASS 180

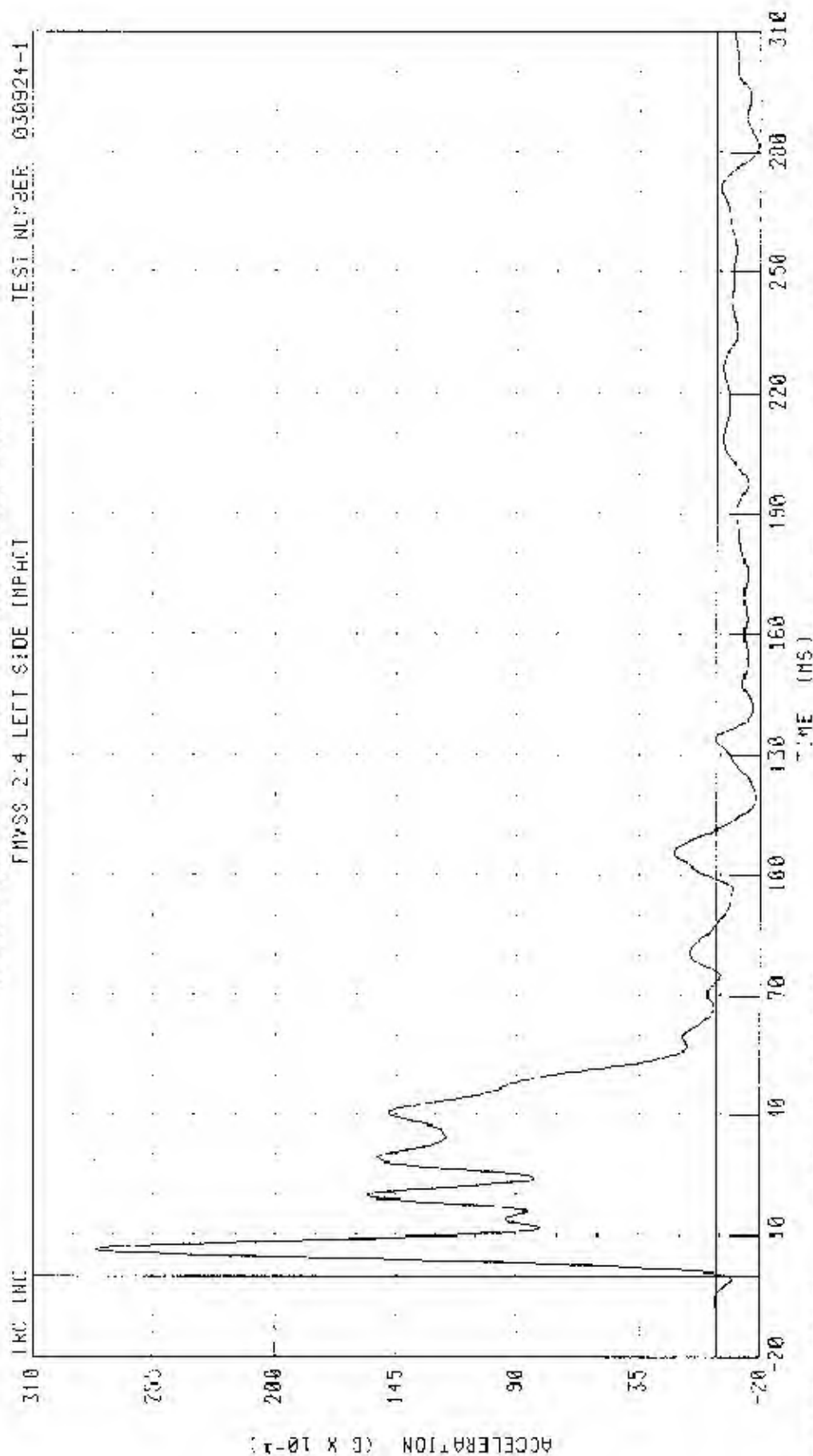
PEAK DATA 0 00 KPH 0 20 PS, -4 82 KPH 0 50 64 75

55.28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO THE SIDE OF 2004 LEXUS RX330

VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

TEST NUMBER 030924-1

PHYS 2.4 LEFT SIDE IMPACT



CHANNEL VCCYC1 FILTER CH CLASS 60

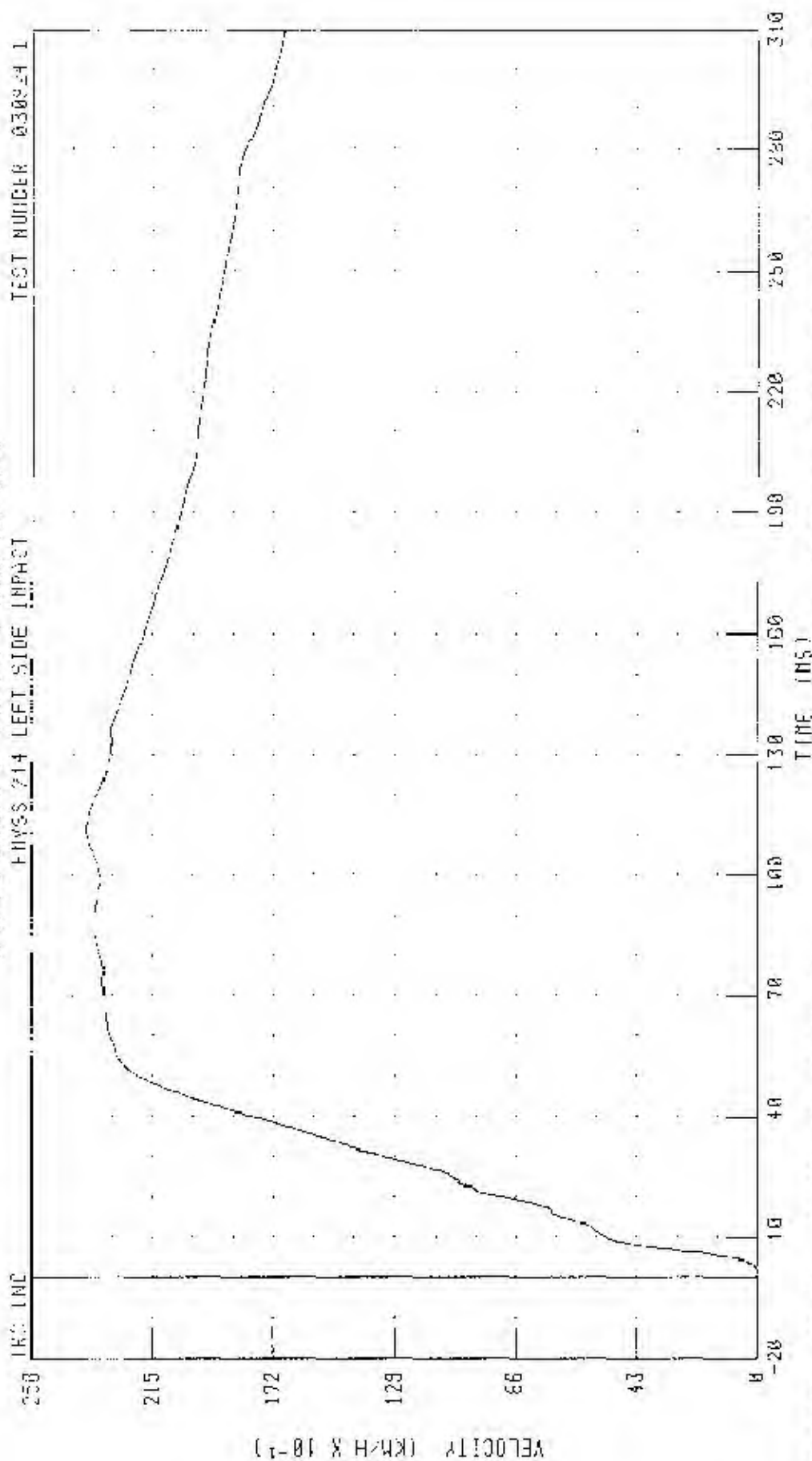
PEAK DATA 28 12 0 0 0.40 MS, -1.90 G @ 281.44 MS

55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX350

VEHICLE CHAIR C- GRAVITY Y-AXIS VELOCITY

PHYS 214 LEFT SIDE IMPACT

TEST NUMBER 030924 1



CHANNEL VCCYV1 FILTER CH. CLASS 180

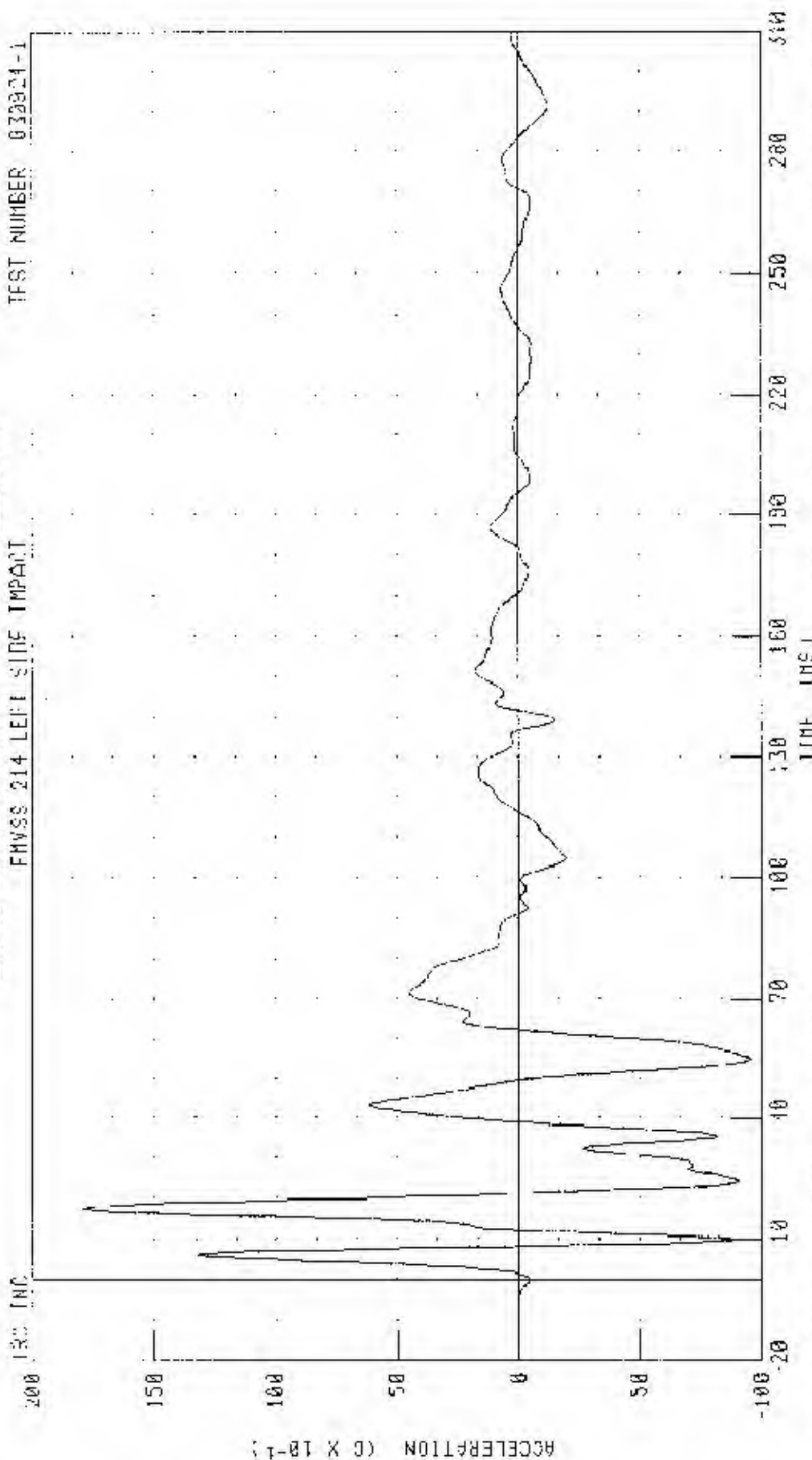
PLAY RATE: 33.87 KHZ @ 11.12 MS, 0.20 KHZ @ 152 MS

55-20 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

TEST NUMBER 030924-1

PHYS 214 LEFT SIDE IMPACT



CHANNEL WCCZ01 FILTER CH CLASS 60

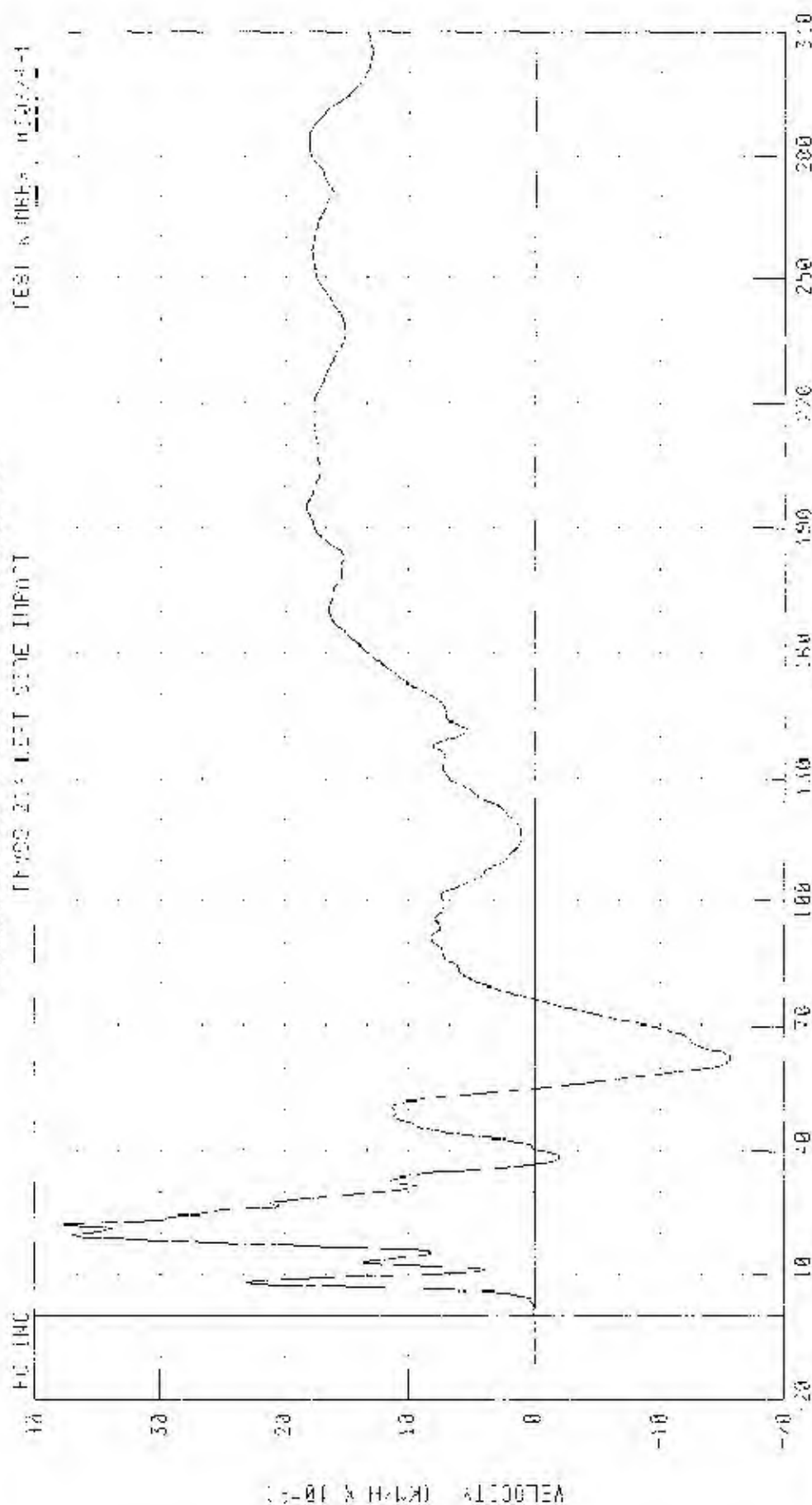
FLAT DATA 17 95 5 0 17 52 MS, -9 53 5 0 54 00 MS

75-23 241 00 JAGGED SIDE IMPACT (MOVING DE-ORABLE BARRIER) 710 FT. N.E. OF 100- 12X00 R0214

VEHICLE CENTER OF GRAVITY, Y-Z-AXIS VELOCITY

TP000 213 LEFT SIDE IMPACT

TEST NUMBER: 030924-1

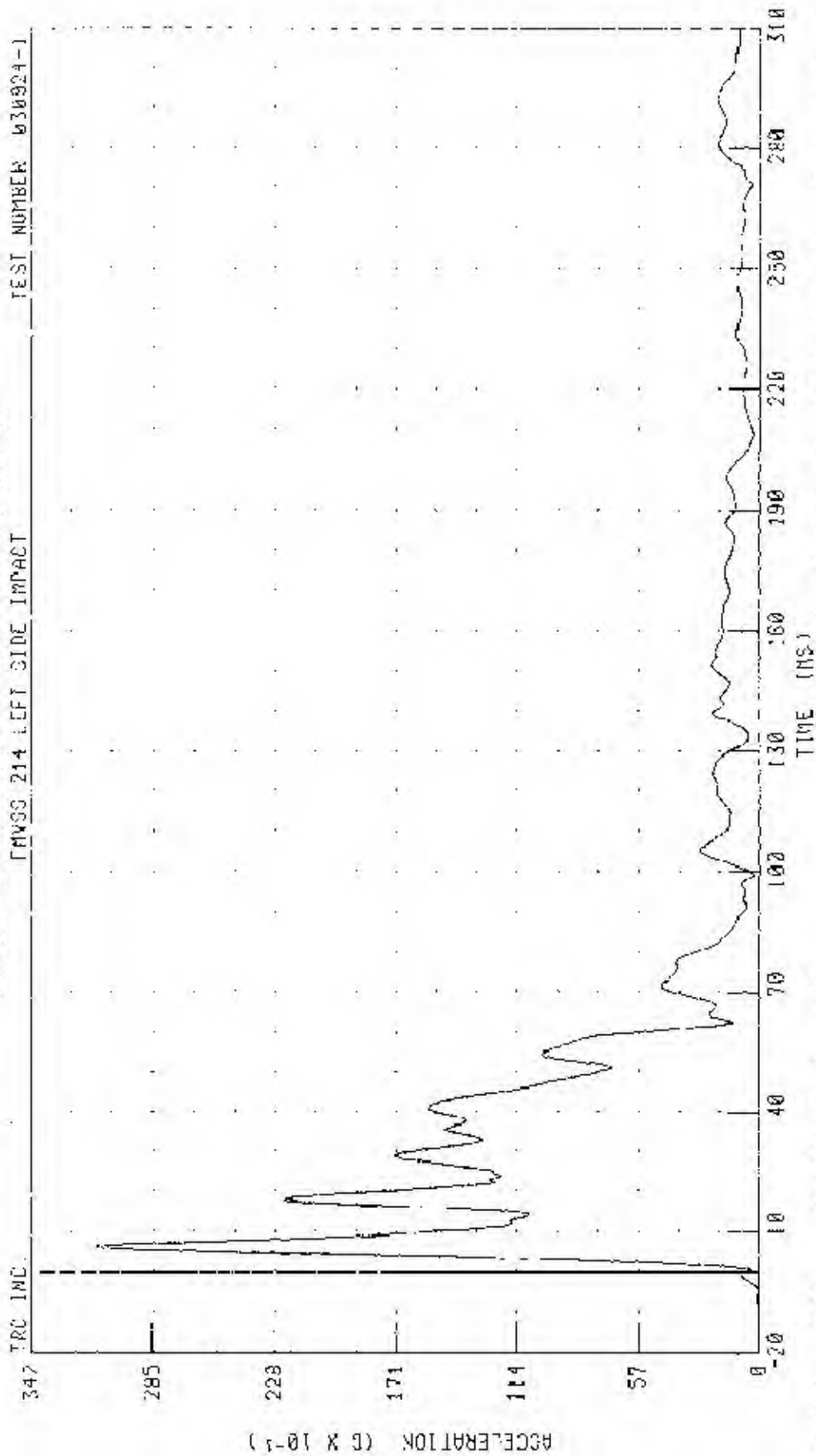


TIME (MS)

CHANNEL 0002X1 FILTER OF CLASS 150

PEAK DATA: 3.70 < 10.00 32.40 MS, -1.50 < 1.00 0.2-40 MS

5/1/28 2004 LEXUS RX330
 VEHICLE CENTER OF GRAVITY RESONANT ACCELERATION



PEAK DATA: 31 26 G @ 640 MS, 0.00 G @ -11 84 MS

CHANNEL VCCRG1 FILTER CH. CLASS 60

MDB Instrumentation Plots

Acceleration Data - Filter Class 60

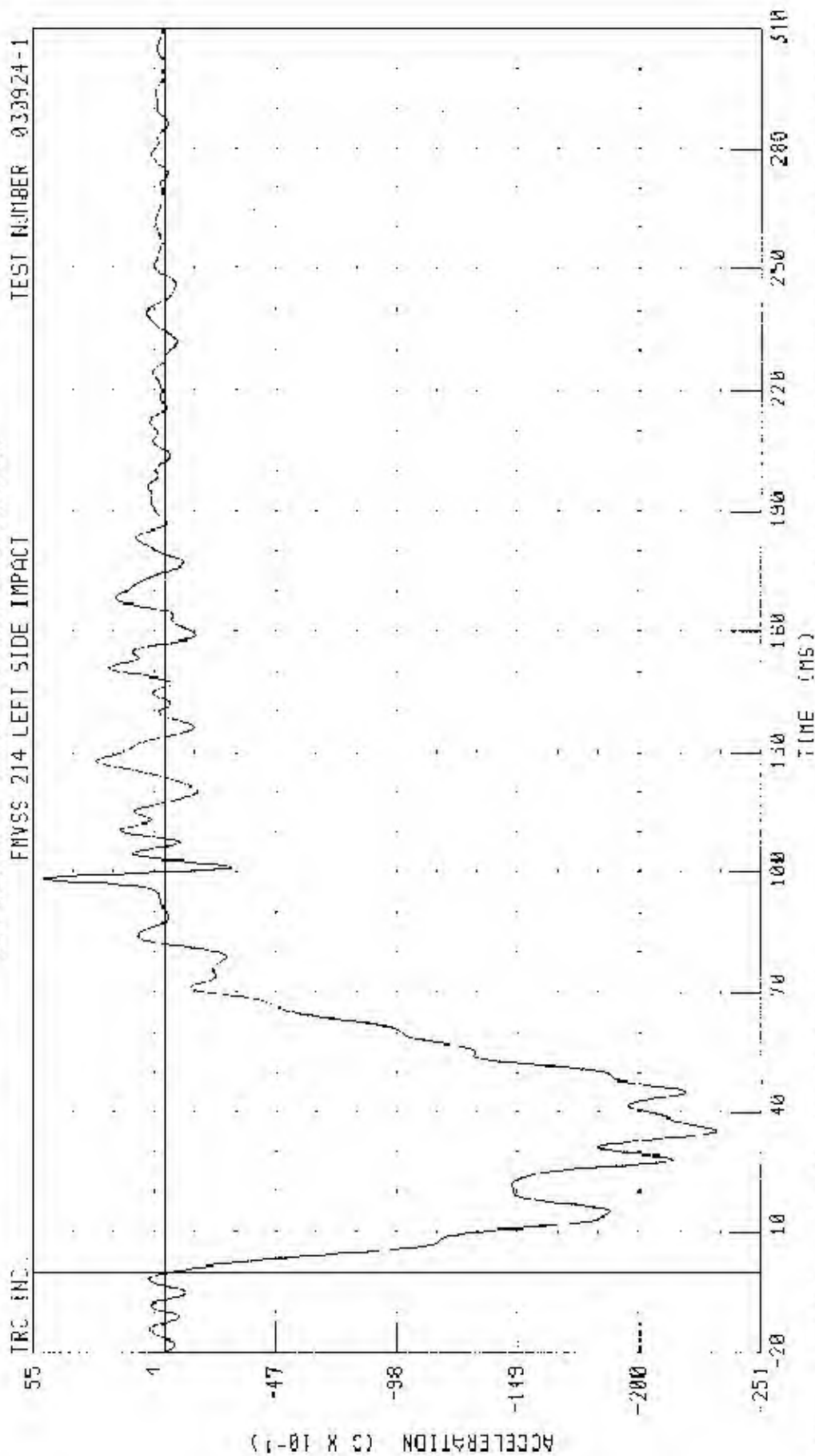
Integration Data - Filter Class 180

55/26 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARrier) INTO LEFT SIDE OF 2004 LEXUS RX330

MJ3 CENTER OF GRAVITY X AXIS ACCELERATION

TEST NUMBER 033924-1

FMVSS 214 LEFT SIDE IMPACT

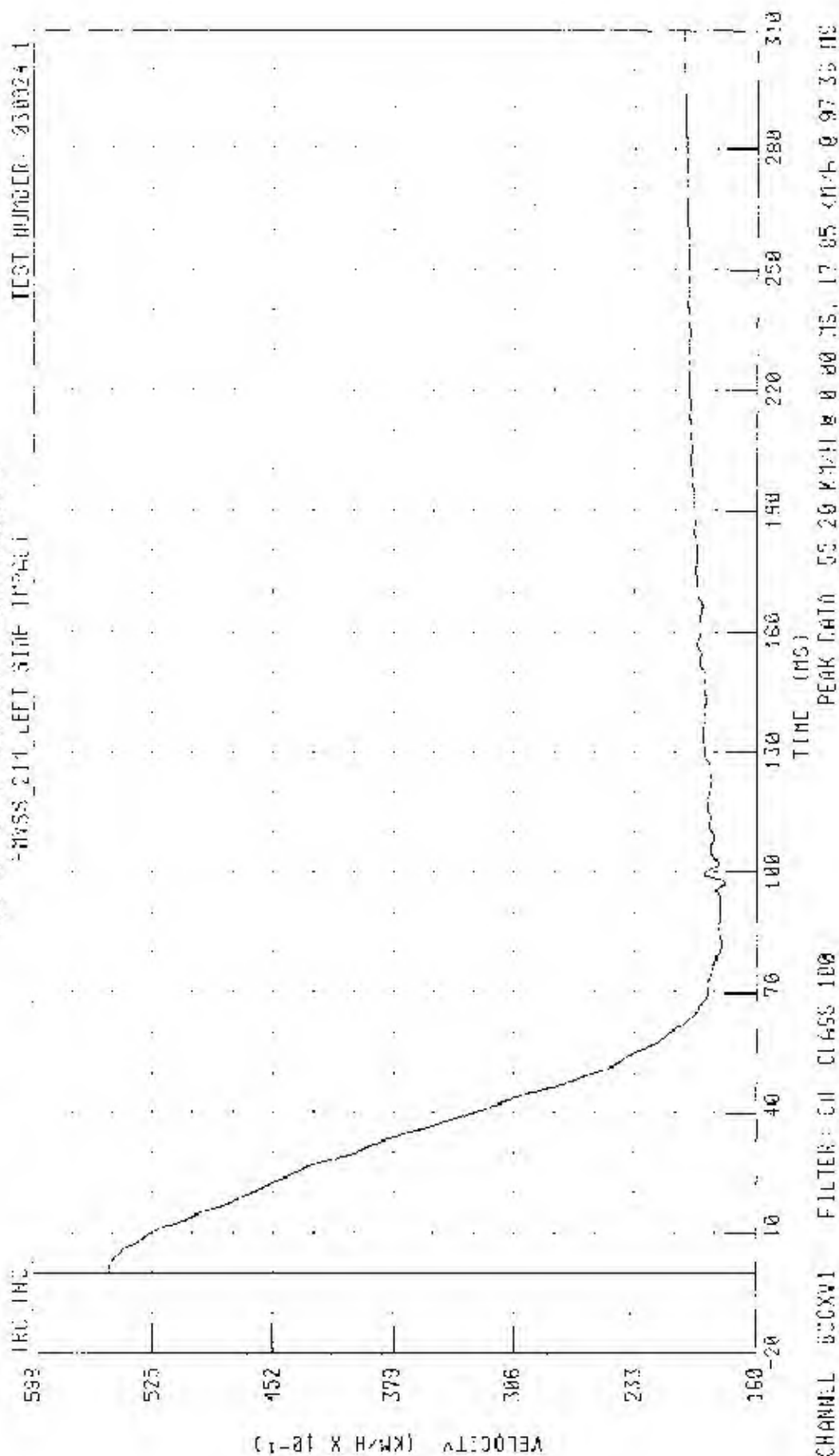


CHANNEL BDCX01 FILTER CH CLASS 60

PEAK DATA 5 07 0 0 98 16 MS, -25.23 G 0 35 44 MS

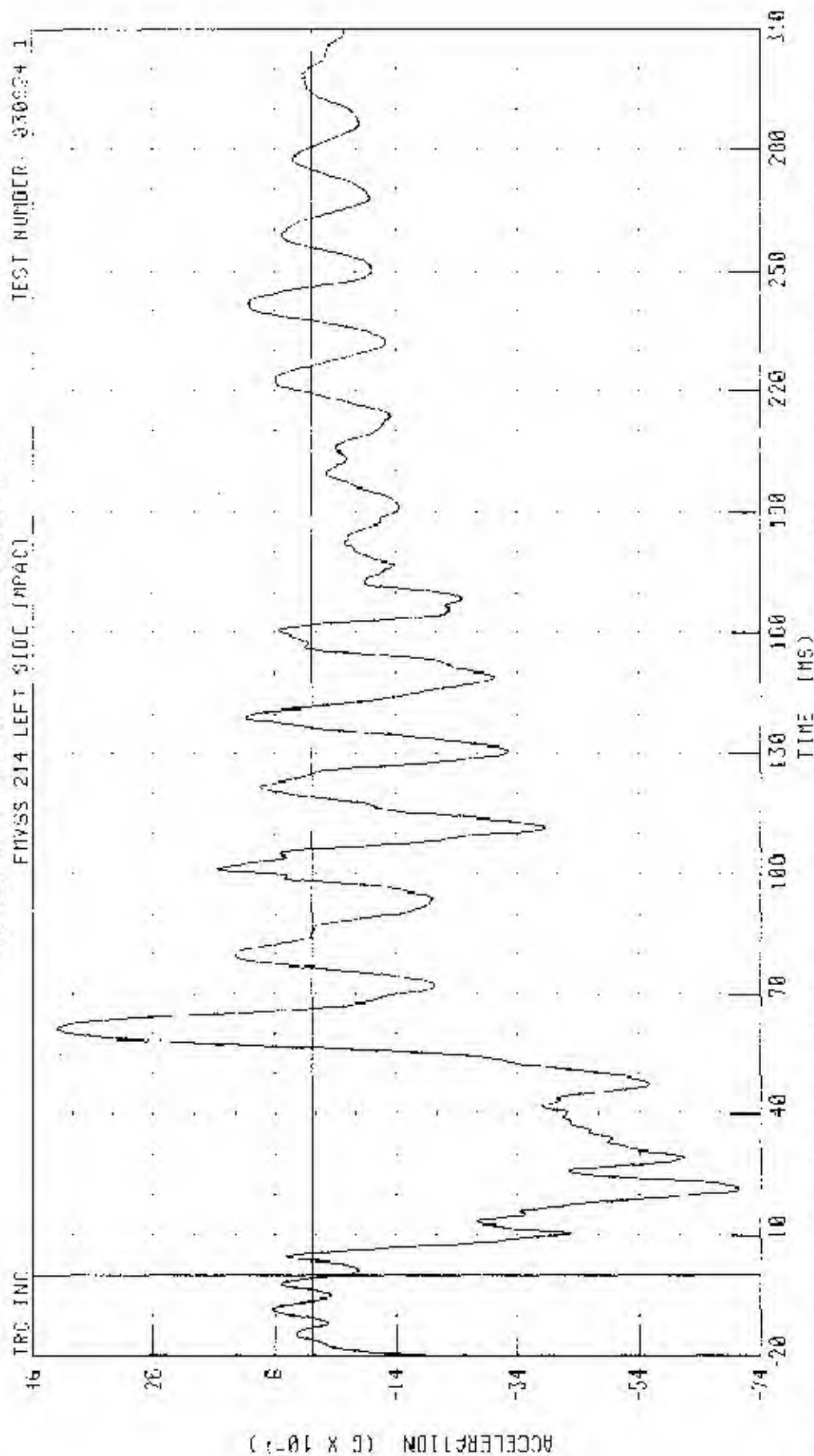
55/23 KPH 90 DEGREE SIDE IMPACT (MOVING REFORMABLE CARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

RED CENTER OF GRAVITY X AXIS VELOCITY



55/20 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

HDB CENTER OF GRAVITY Y-AXIS ACCELERATION



CHANNEL: BODYC1 FILTER: CH CLASS 60

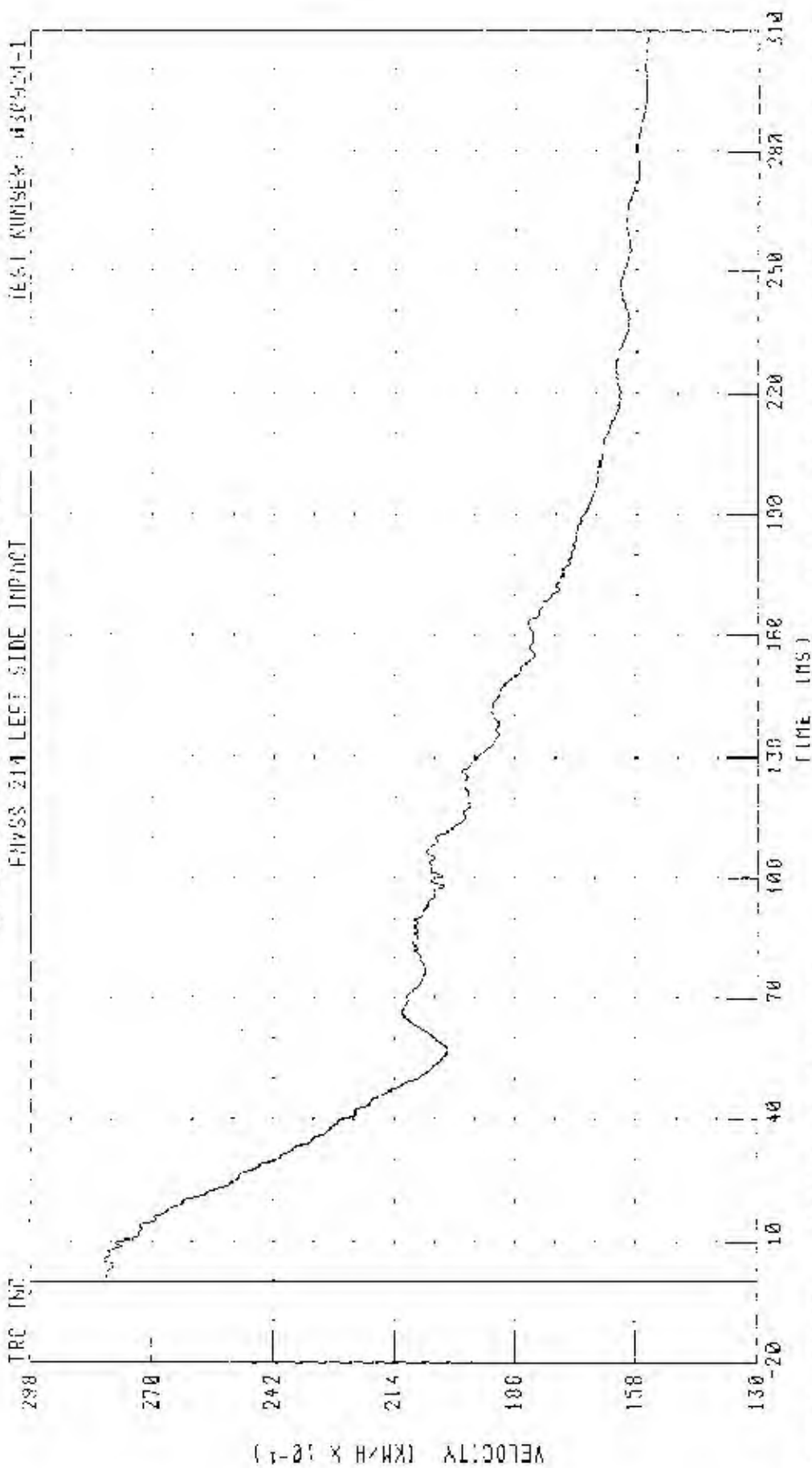
PEAK DATA: 20 6 61 60 MS; -7 07 6 21 36 MS

5300S KPH 50 DEGREE RICH IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

MOB CENTER OF GRAVITY Y AXIS VELOCITY

PHASE 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1

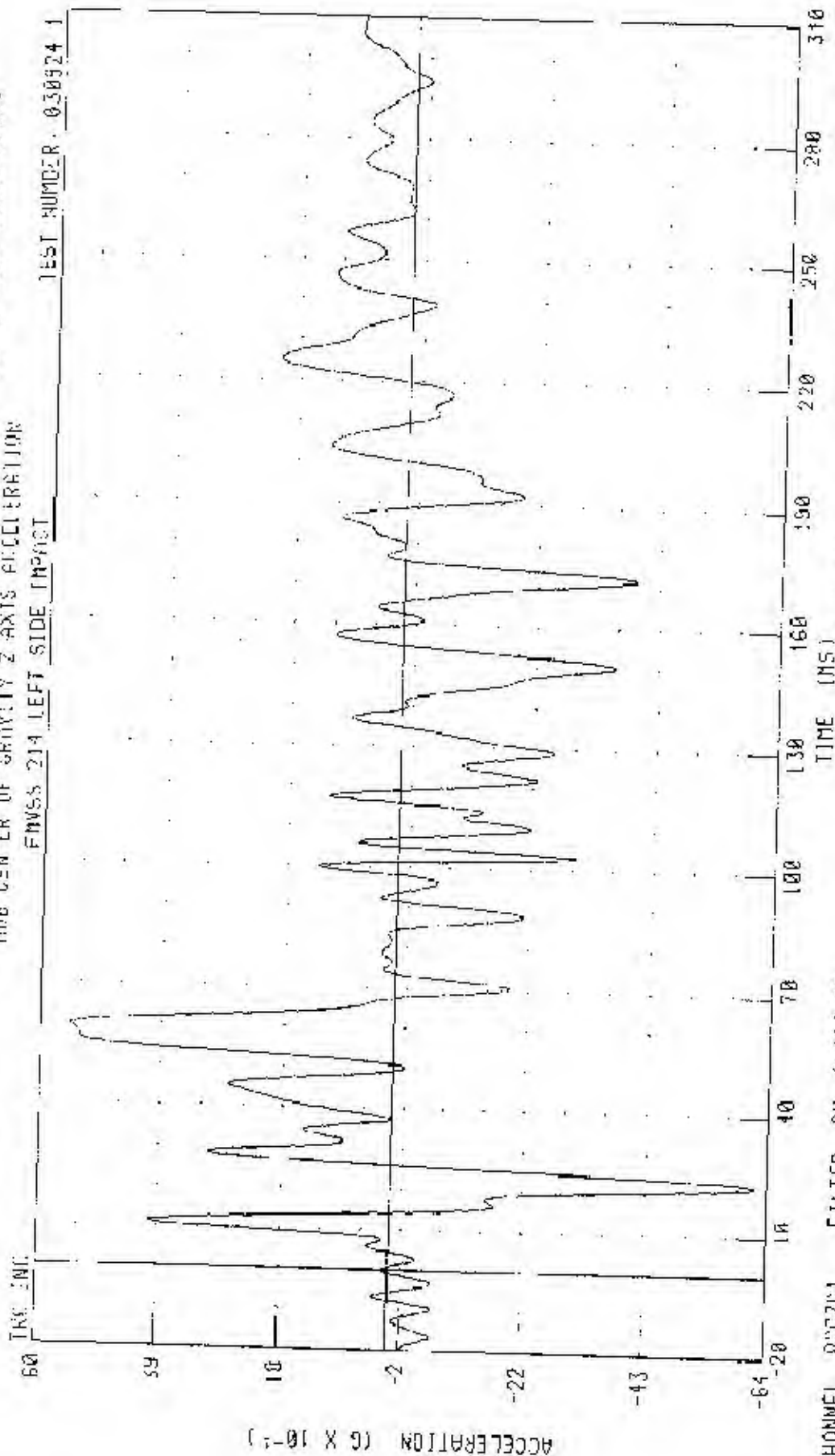


CHANNEL: BDCYV1 FILTER: CH CLASS 130

PEAK DATA: 28 10 KPH @ 0.44 MS, 15 48 KPH @ 310 MS

55-28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX330

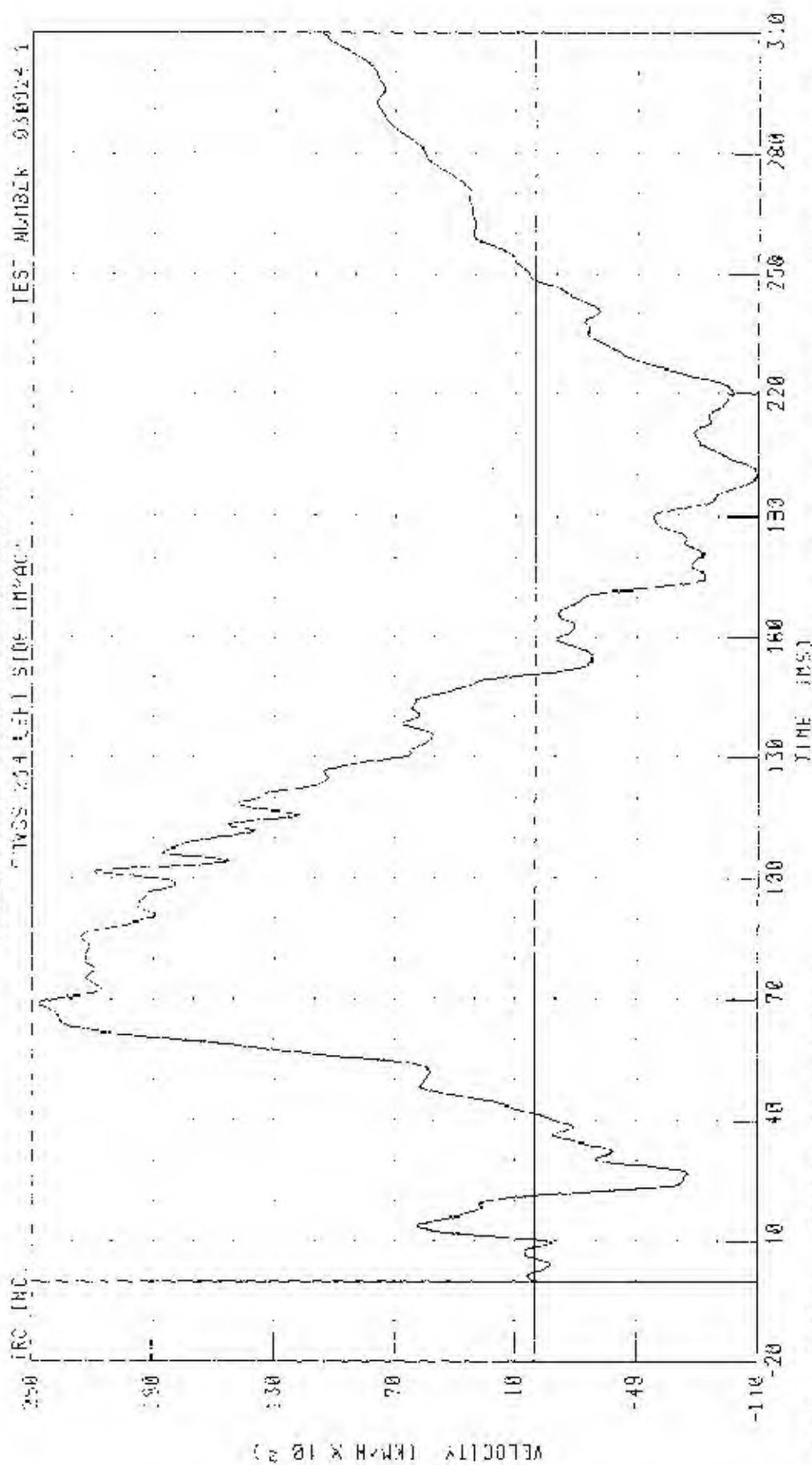
MOB CENTER OF GRAVITY Z AXIS ACCELERATION



PEAK DATA 5 58 0 0 59 52 MS; -6 31 0 0 22 40 MS

55/28 KPH 2P DEFORME SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 16XJS RX330

MCB CENTER OF GRAVITY Z-AXIS VELOCITY



PEAK DATA 2 46 KPH @ 68 56 MS, -1 09 KPH @ 155 92 MS

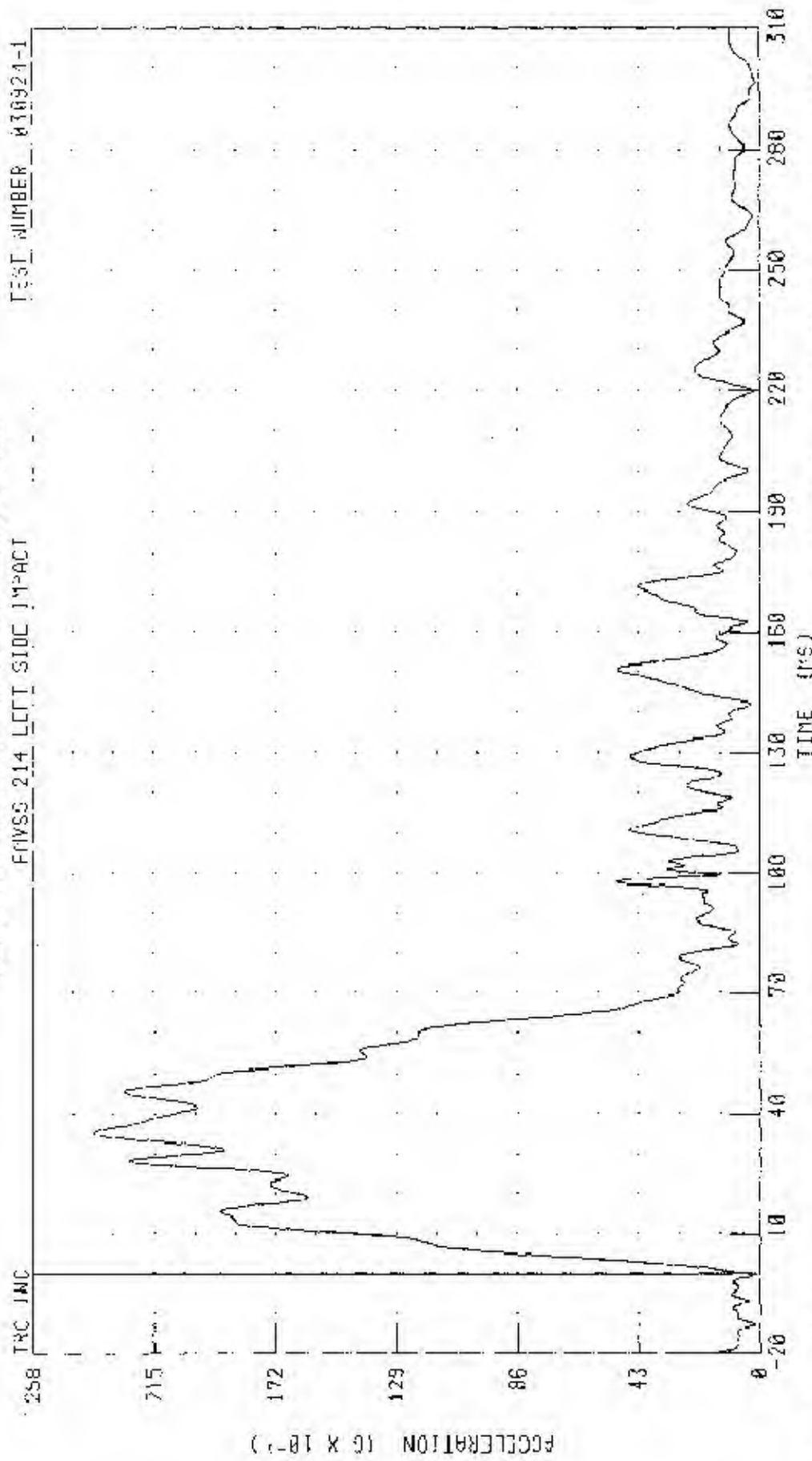
CHANNEL BCG2V1 FILTER ON CLASS 180

55/28 KPH 00 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

108 CENTER OF GRAVITY RES. 1MM ACCELERATION

TEST NUMBER 030924-1

FMVSS 214 LEFT SIDE IMPACT



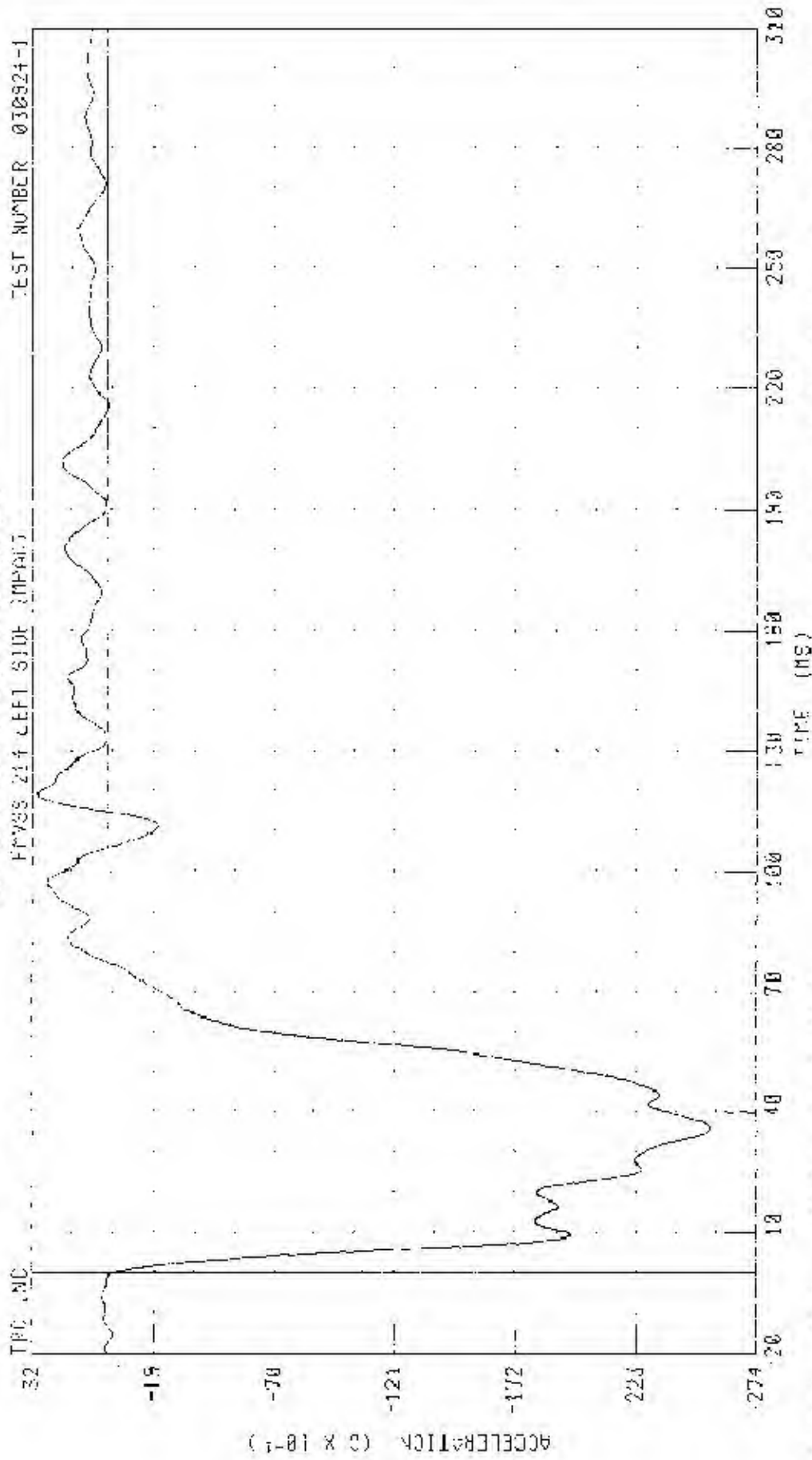
CHANNEL: BCGRG1 FILTER: CH CLASS: 00

PEAK DATA 23.71 G @ 35.36 MS. 0.14 G @ -12.88 MS

55/29 KPH 40 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

FOR LEFT REAR X-AXIS ACCELERATION

EVANS 214 LEFT SIDE IMPACT TEST NUMBER 030924-1



CHANNEL LRRX01 FILTER: CH. 2, FREQ. 50

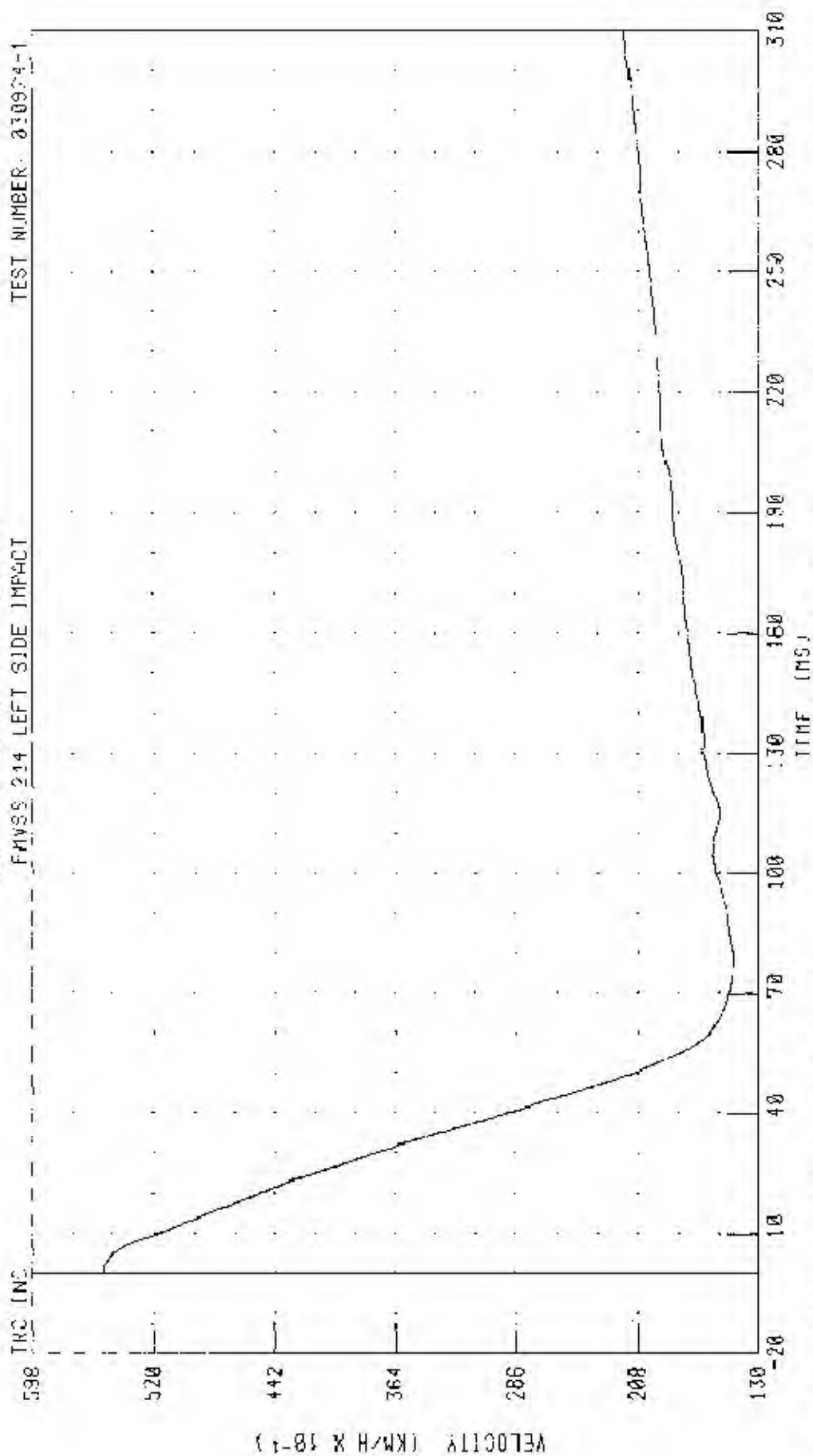
PEAK DATA 2.94 G @ 119.36 MS, -25.41 G @ 30.92 MS

55/78 KPH 90 DEGREE SID- IMPACT (MOVING DEFORMABLE BAR) INTO LEFT SIDE OF 2004 LEXUS RX330

FOR LEFT REAR X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL: LRRXV1 FILTER: CH CLASS 180

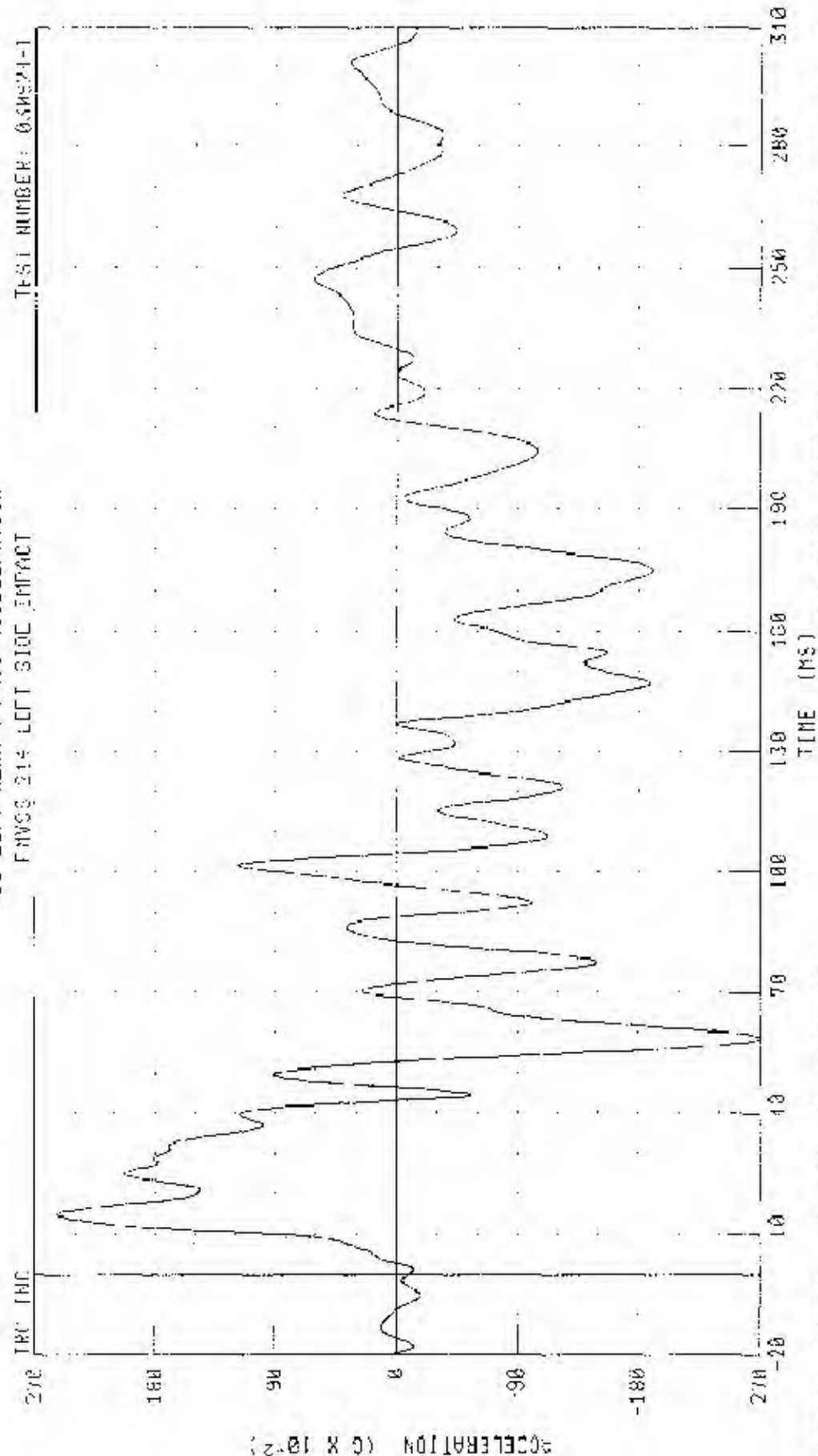
PEAK DATA: 55 22 KM/H @ 1 36 MS, 14 52 KM/H @ 77 32 MS

5/17/78 4PH 90 DEGREE- SIDE IMPACT (MOVING DEFORMABLE 20-KI/HR) INTO LEFT SIDE OF 2024 LEXUS RX330

MODE LEFT REAR Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1



CHANNEL LRRV02 FILTER CH CLASS0 E0

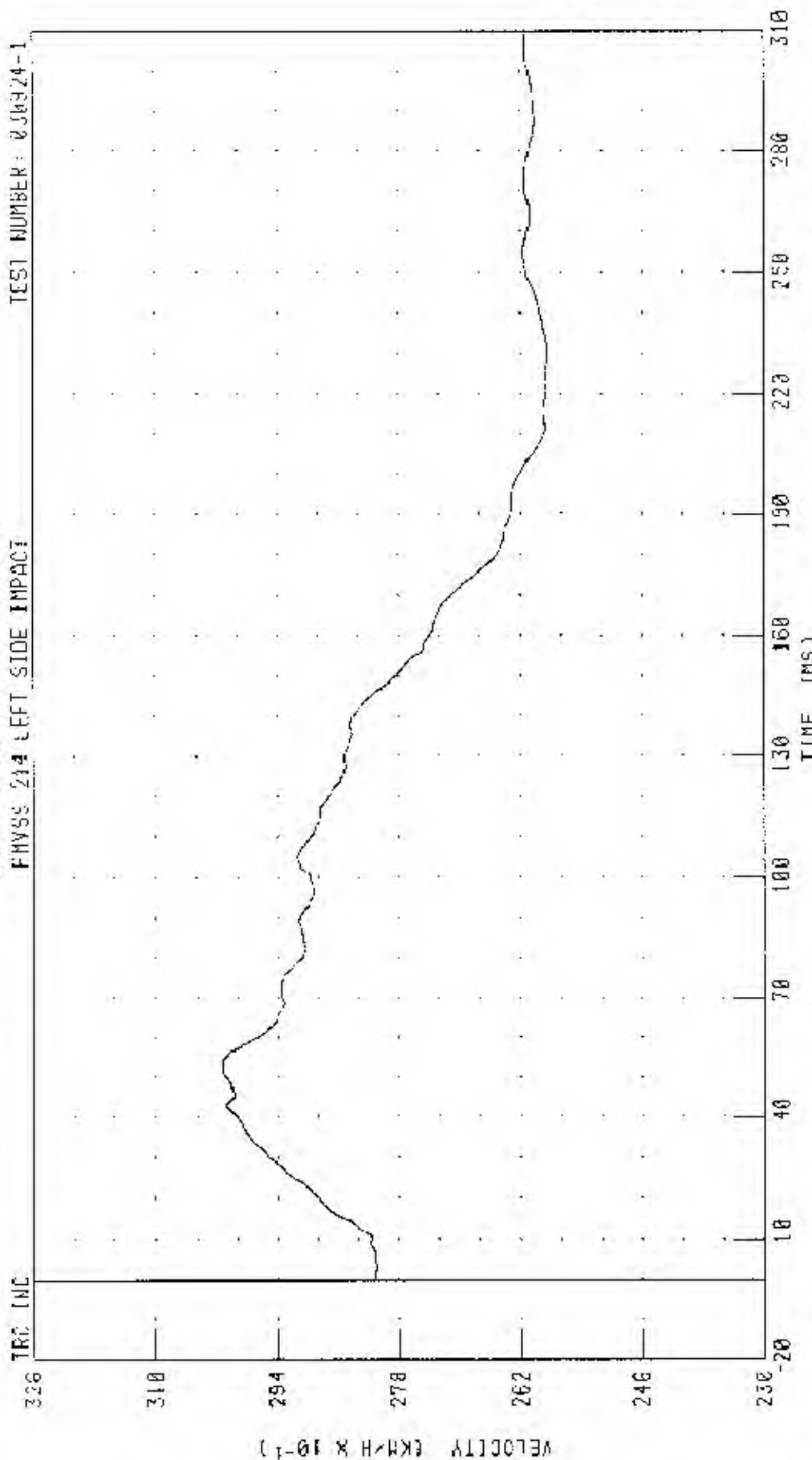
PEAK DATA 2 53 0 0 14 88 MS, 2 71 6 8 58 72 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

108 LEFT REAR Y-AXIS VELOCITY

FHVS 214 LEFT SIDE IMPACT

TEST NUMBER: 030924-1

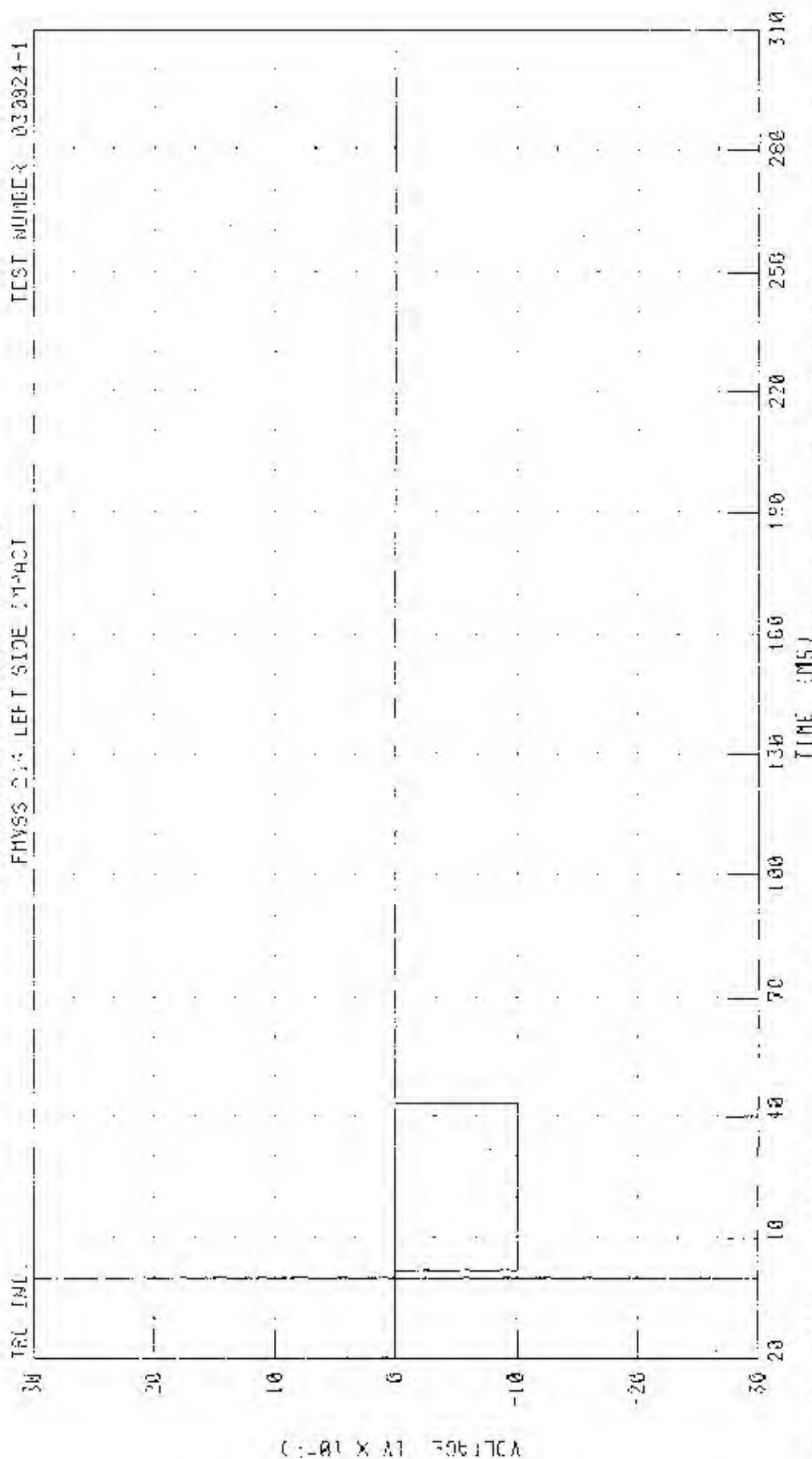


CHANNEL LRRYV1 FILTER: CH CLASS 180

PEAK DATA 30 13 KM/H @ 53 28 MS, 25 85 KM/H @ 230 16 MS

55-20 KPH 90 DEGREE SIDE IMPACT (MOVING, DEFORMABLE BARRIER) IN 10 LEFT SIDE OF 2004 FORD EX333

MOB RIGHT SIDE CONTACT SWITCH



CHANNEL: PDSR2 FILTER: 01: CLASS 1000

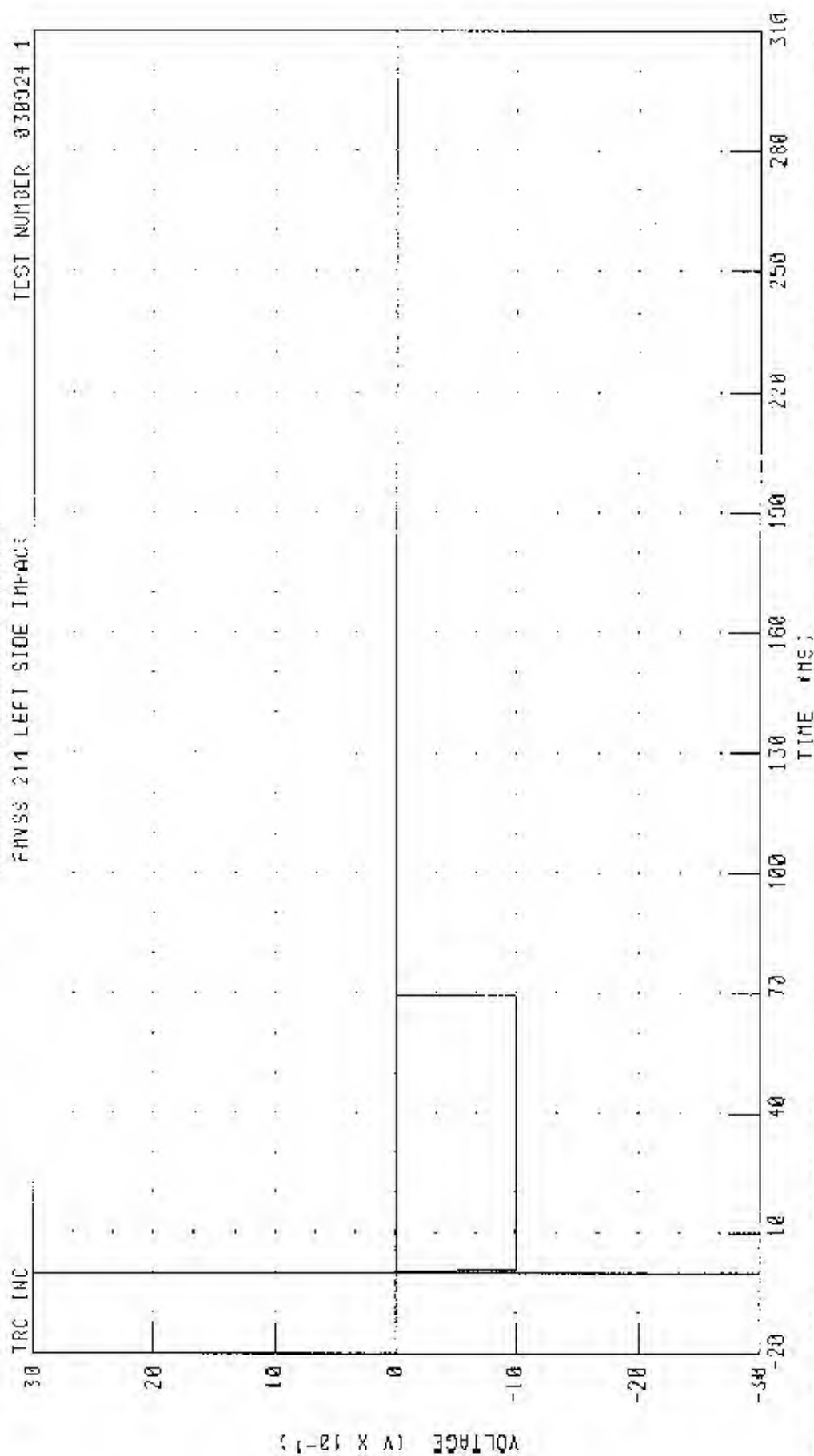
PEAK DATA: 0.00 V @ 310.00 MS, -1.00 V @ 210 MS

55-20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 FORD FOCUS RX3.50

MOB LEFT SIDE CONTACT SWITCH

PHYS 214 LEFT SIDE IMPACT

TEST NUMBER 030924 1



CHANNEL MOB_1 FILTER CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 NS, 1.00 V @ 0.72 NS

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - FIR Filtered

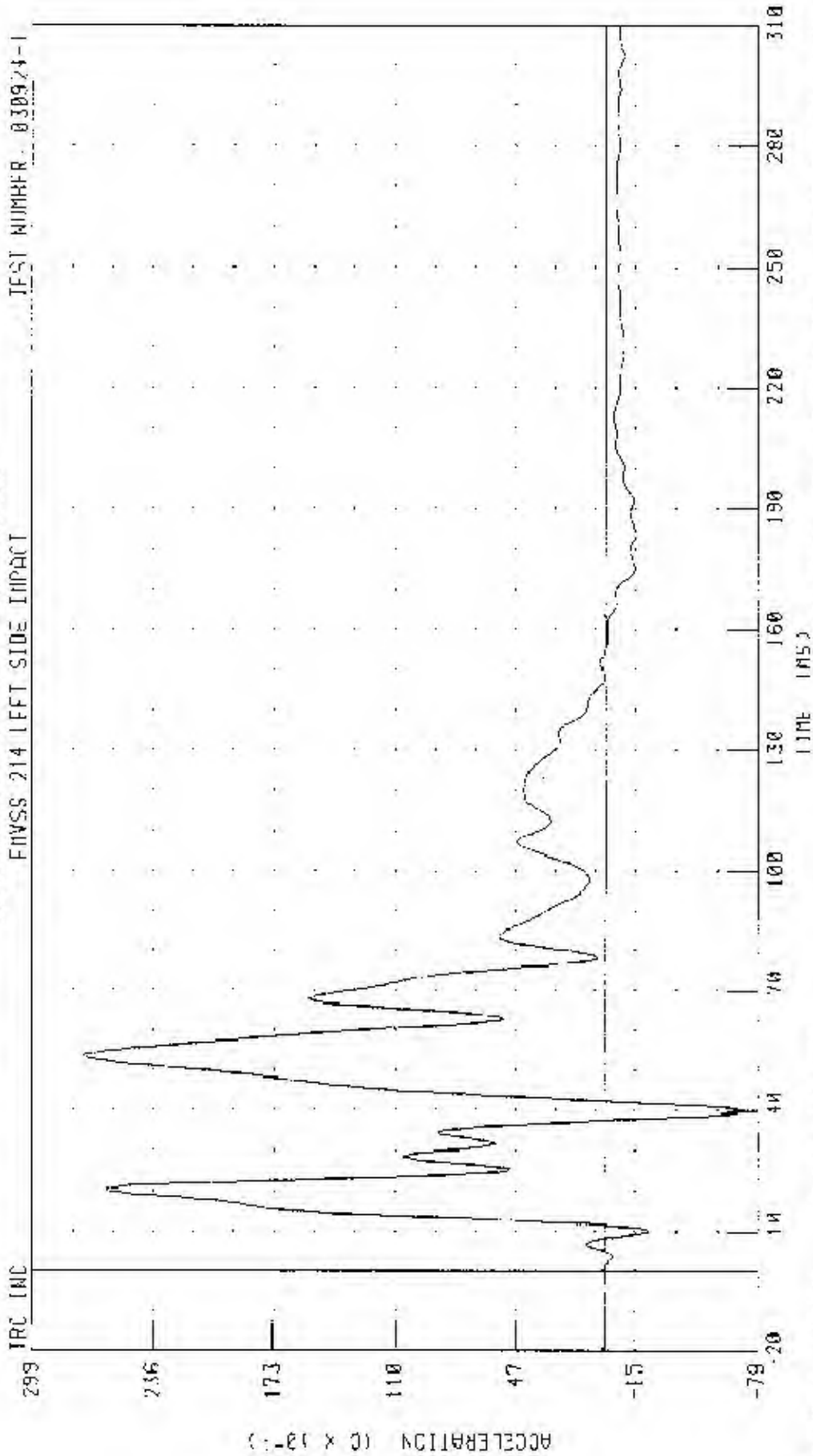
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2001 -XUS R4338

DRIVER UPPER RIO Y AXIS ACCELERATION

TEST NUMBER: 030924-1

ENVSS 214 LEFT SIDE IMPACT

TRC INC

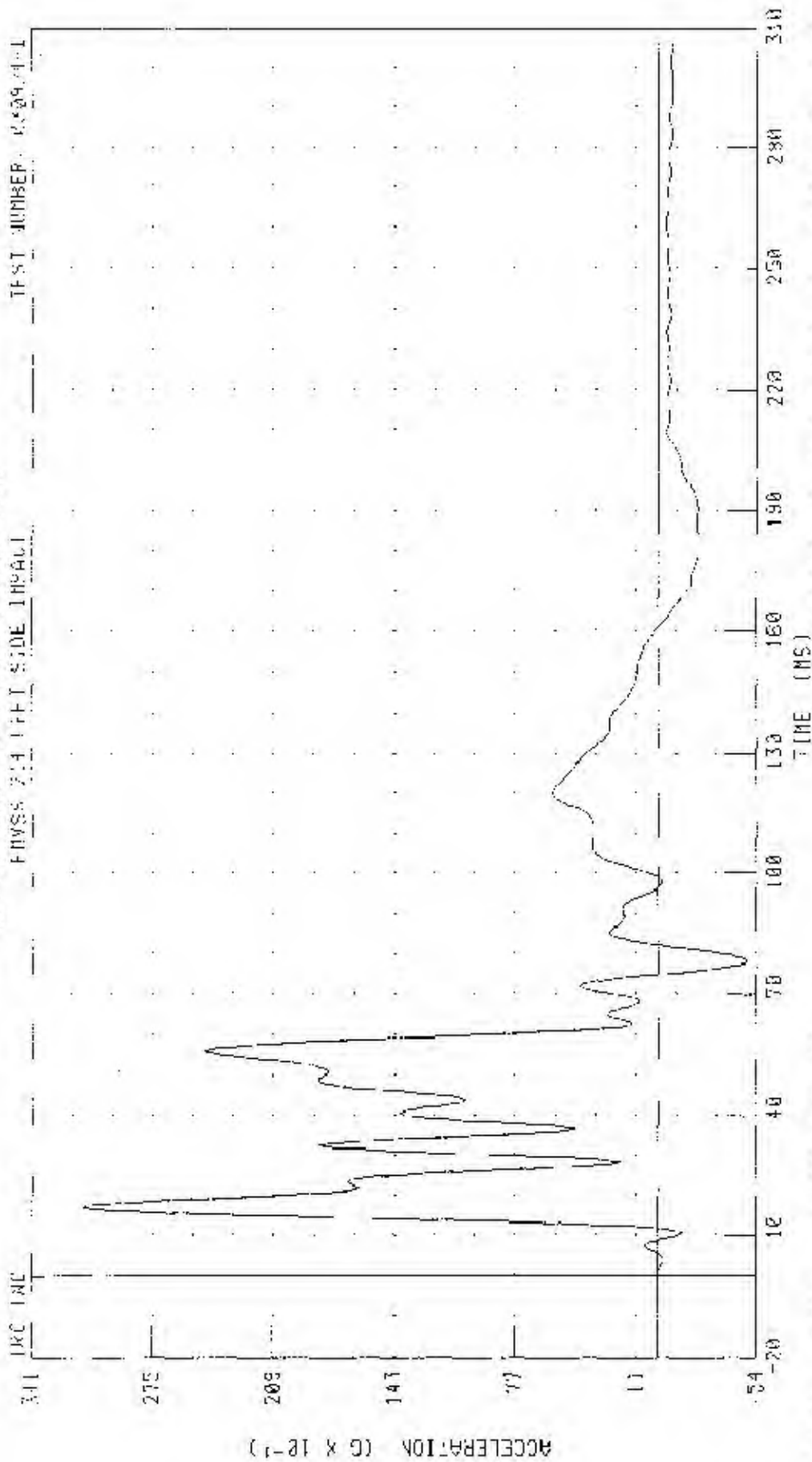


CHANNEL 100VOLT FILTER FIR 100

PEAK DATA: 27 24 0 53 75 MS, 7.27 C 0 40 00 HS

44/23 424 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE ANVIL) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER RIB Y-AXIS ACCELERATION



CHANNL LRYG1 FILTER FIR 102

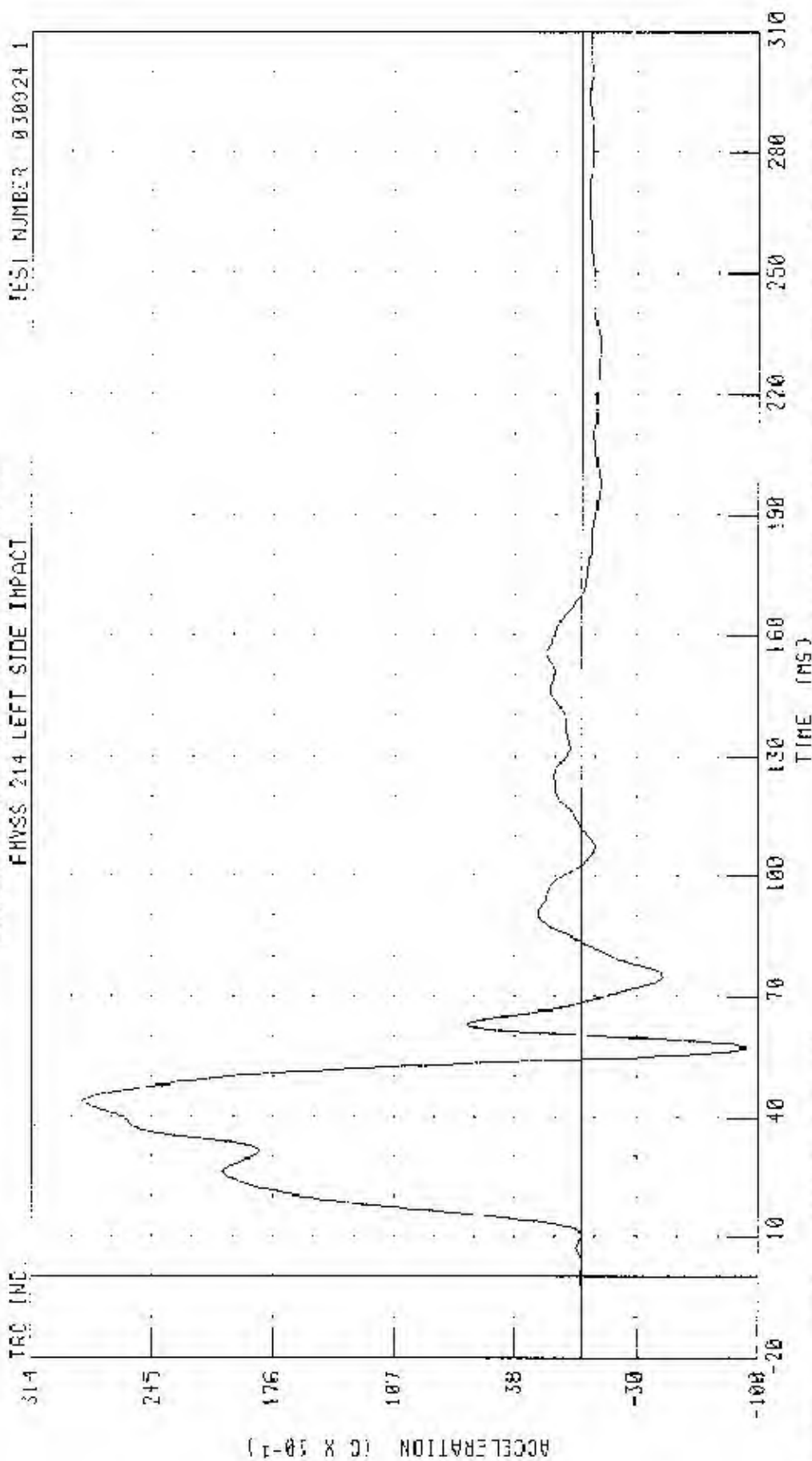
PEAK DATA 31 44 6 0 16 87 MS, -4 93 6 0 70 13 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER LOWER SPINE Y-AXIS ACCELERATION

PHYSS 214 LEFT SIDE IMPACT

TEST NUMBER 030924 1



CHANNEL 12V01 FILTER FIR 100

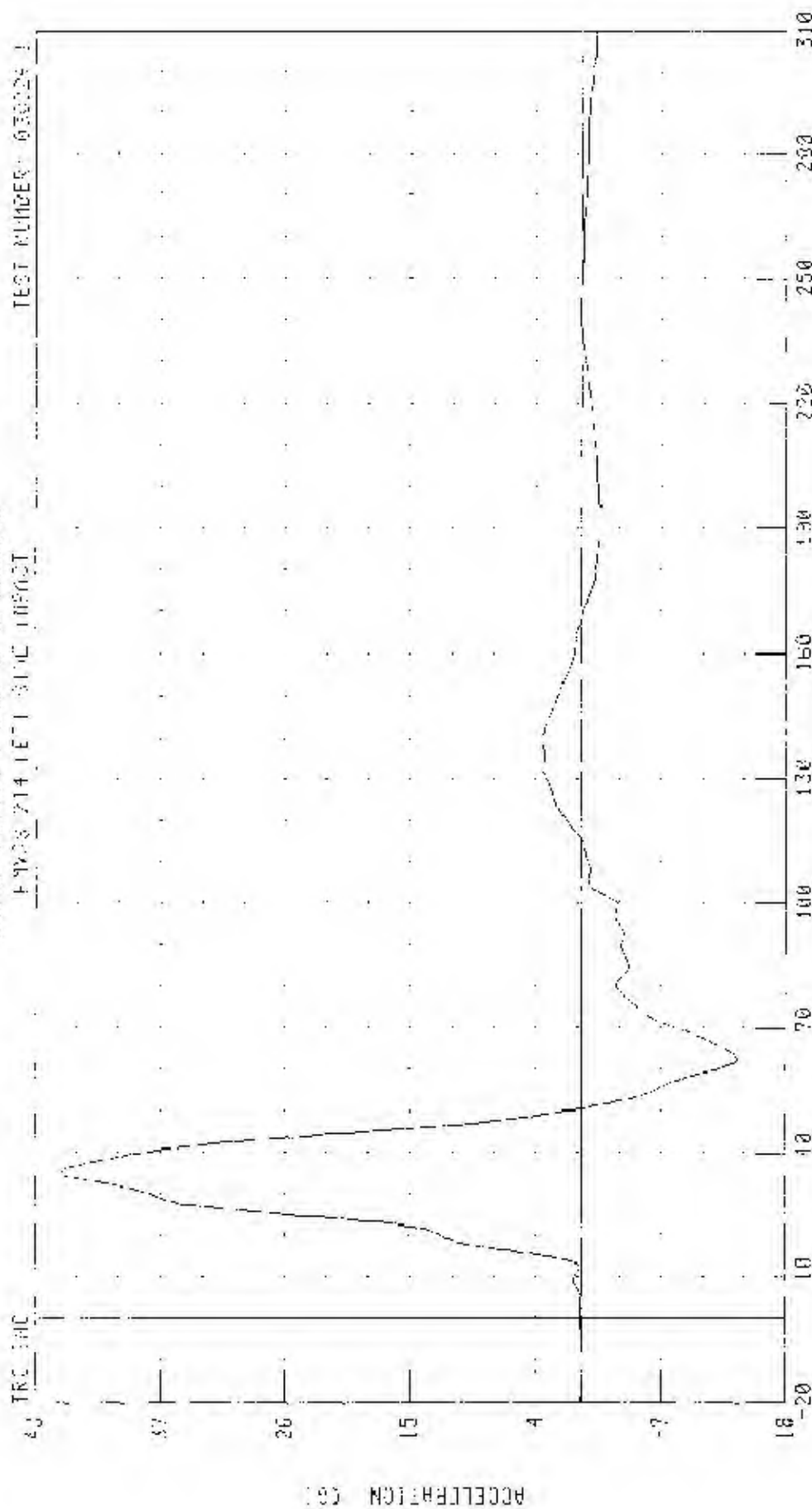
PEAK DATA: 28 44 60 43 75 MS -9 34 0 57 50 1S

STATUS PAGE OF RECORDS AND PRESENT CONTINUING OPERATIONS INTO LEFT SIDE OF 2004 LEADS 02102

APPROX POLARIS 7-0513 0012 PROHIBITION

FW23 214 LEFT SIDE INSIDE

TEST NUMBER 030924-1



CHANNEL: PEVVOY FILTER: 218 100

PE44 DATA 45 02 0 2 50 00 1.5 13.55 0 0 02 00 MS

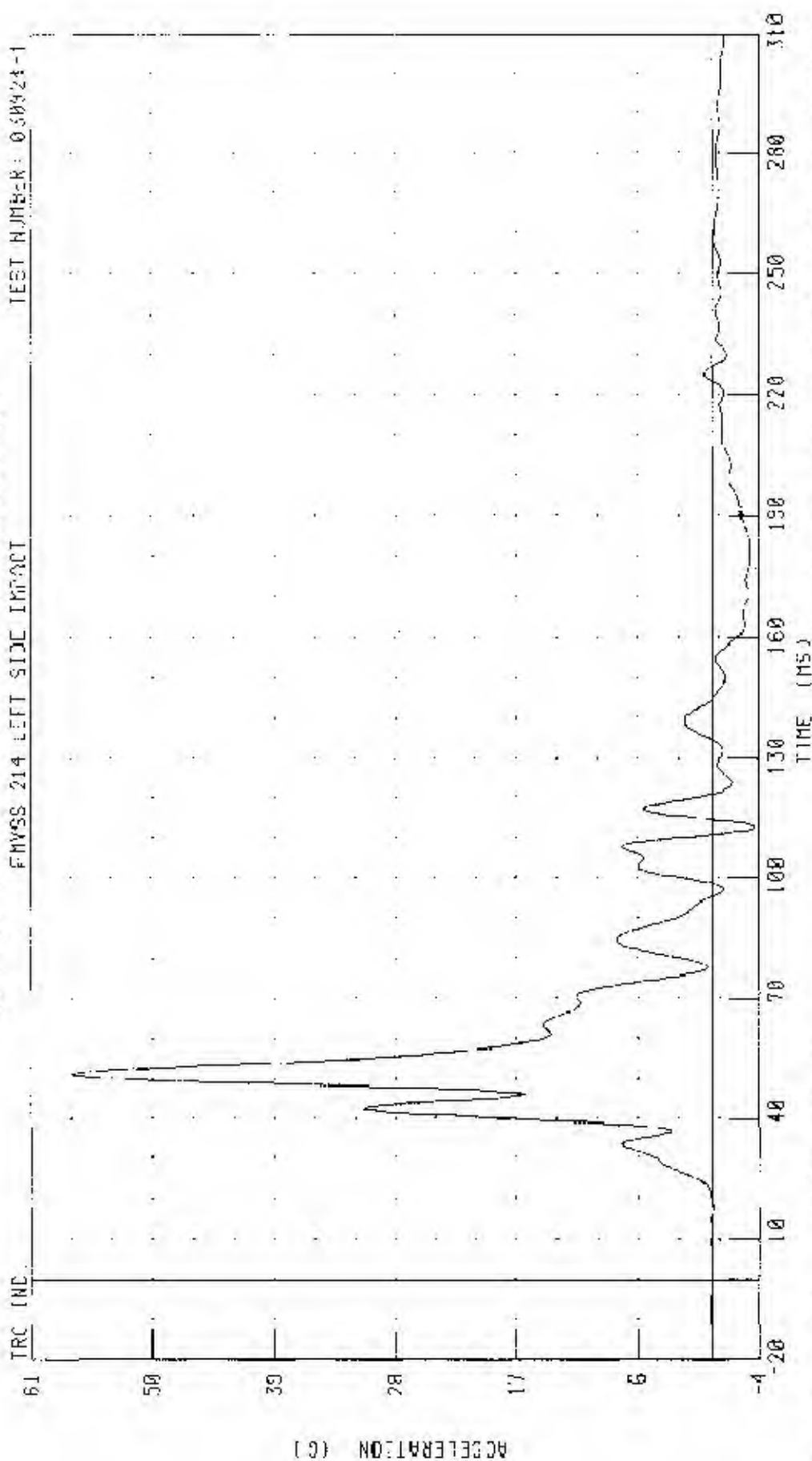
55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

TEST NUMBER: 030924-1

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



CHANNEL: TURV64 FILTER: FIR 100

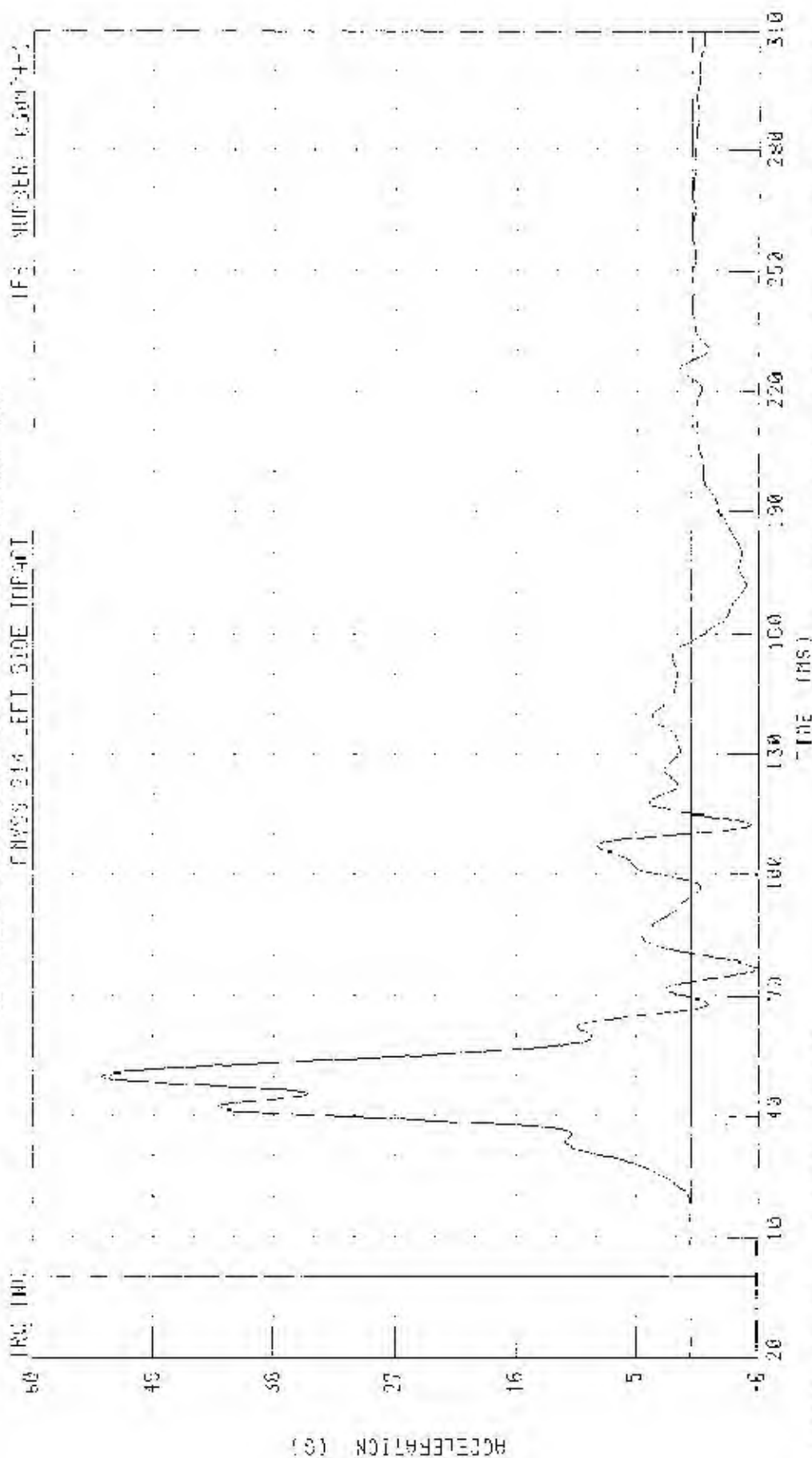
PEAK DATA: 58.24 0.05125 MS, -3.97 0.011250 MS

1-800-234-4673 SEE US AT THE 2004 NATIONAL DEFENSE-CONSUMER CONFERENCE

RECEIVED DIRECTOR, DEPT. OF HEALTH, EDUCATION & WELFARE
JAN 11 1971

THWISS SIN LEFT SIDE IMPACT

$\text{C}_{10}\text{H}_{16}\text{O}_5$: 177.0416 : 44.011



CONFIDENTIAL - U.S. EYE HILL: F.F. 100

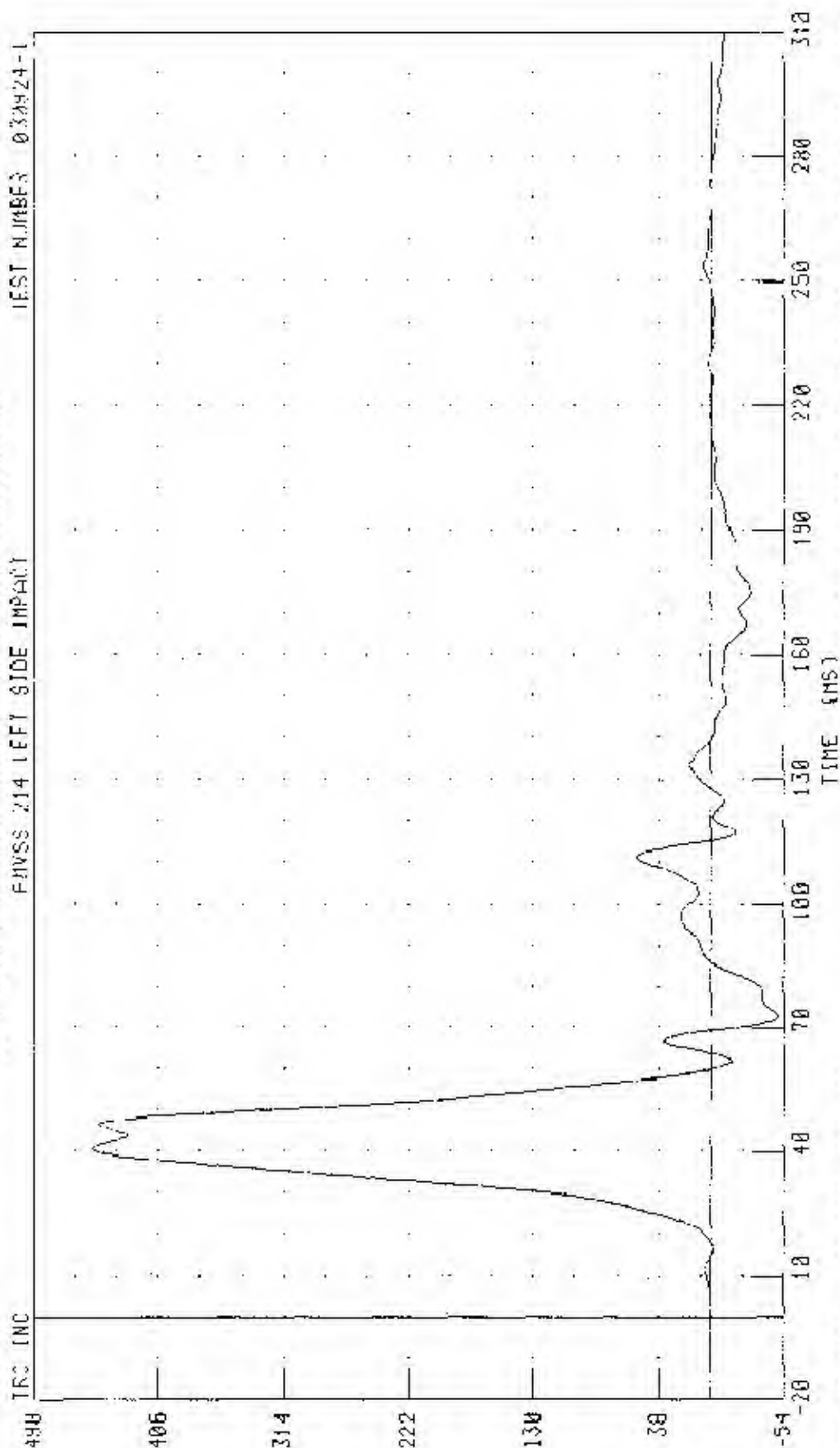
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

FNVS 214 LEFT SIDE IMPACT

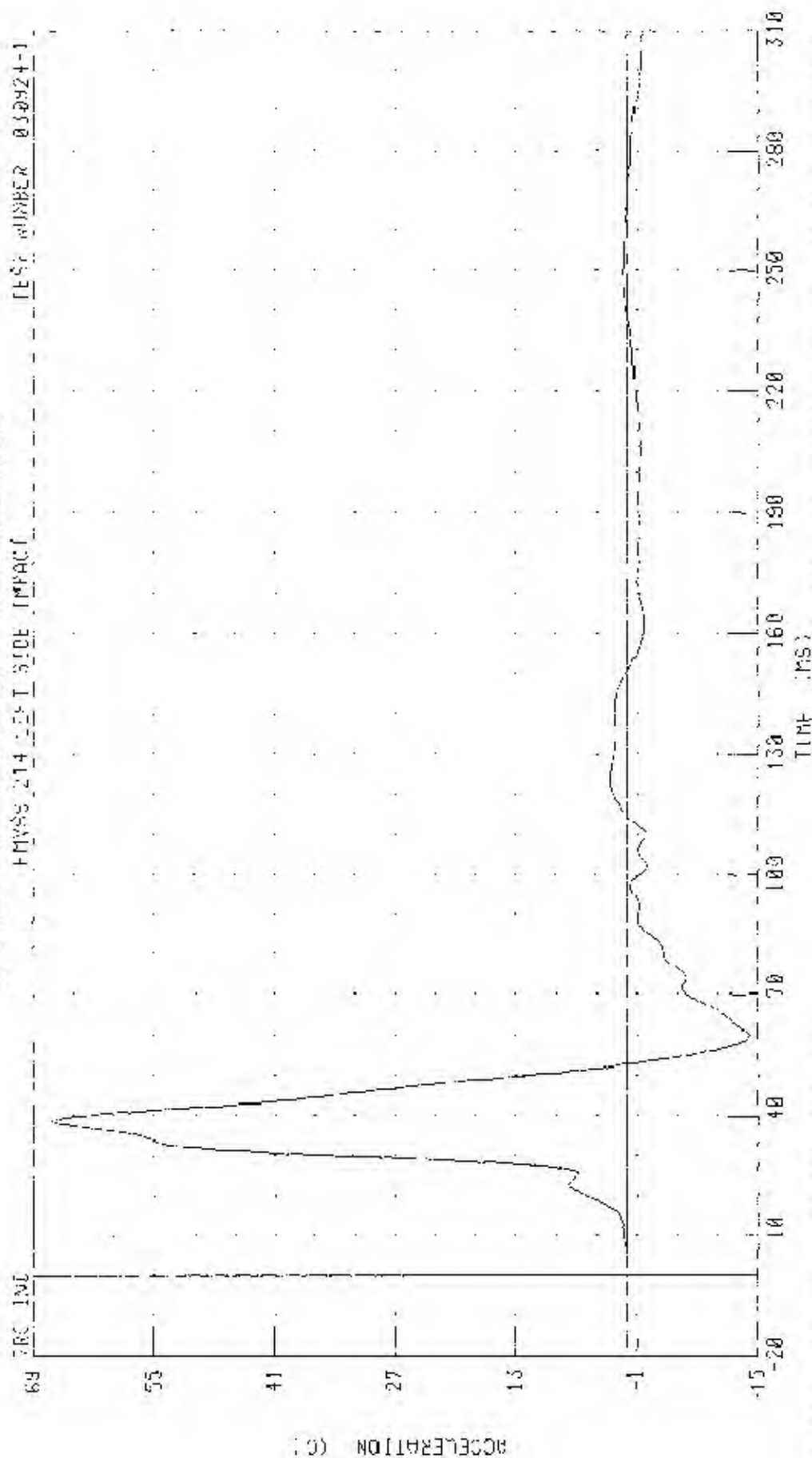
TEST NUMBER 030924-1



CHANNEL : T12Y04 FILTER FIR 130

PEAK DATA 45 53 6 0 40 63 15; -4 98 6 0 73 15 NS

55/20 KPH 50 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330
 LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION



CHANNEL FEVYC4 FILTER FIR 100

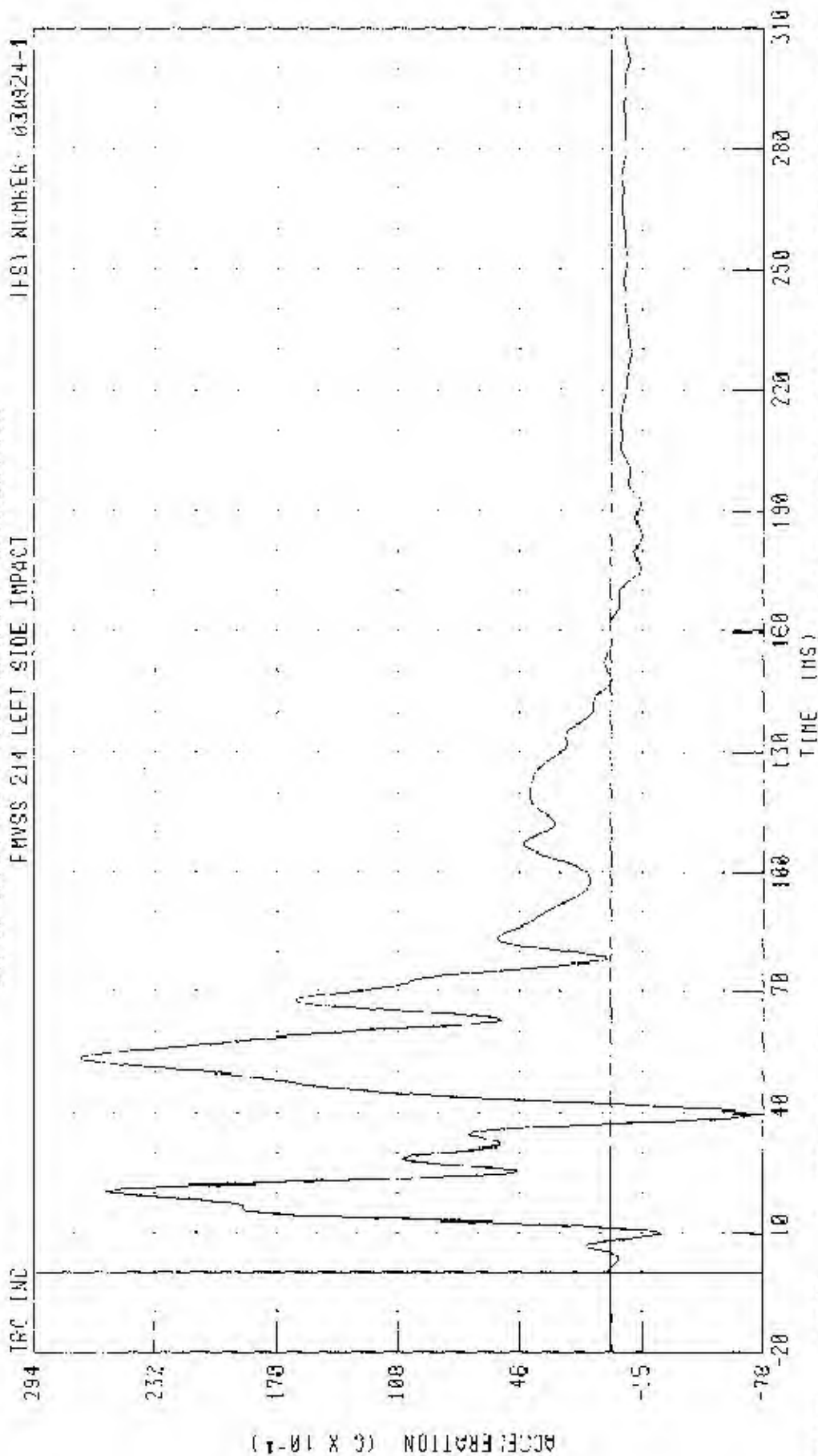
PEAK DATA 26.87 G @ 38.75 MS; -13.91 G @ 62.00 MS

55/28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER: INTO LEFT SIDE OF 2004 LEXUS RX330

DRIVER UPPER RIB Y-AXIS RECURRENT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

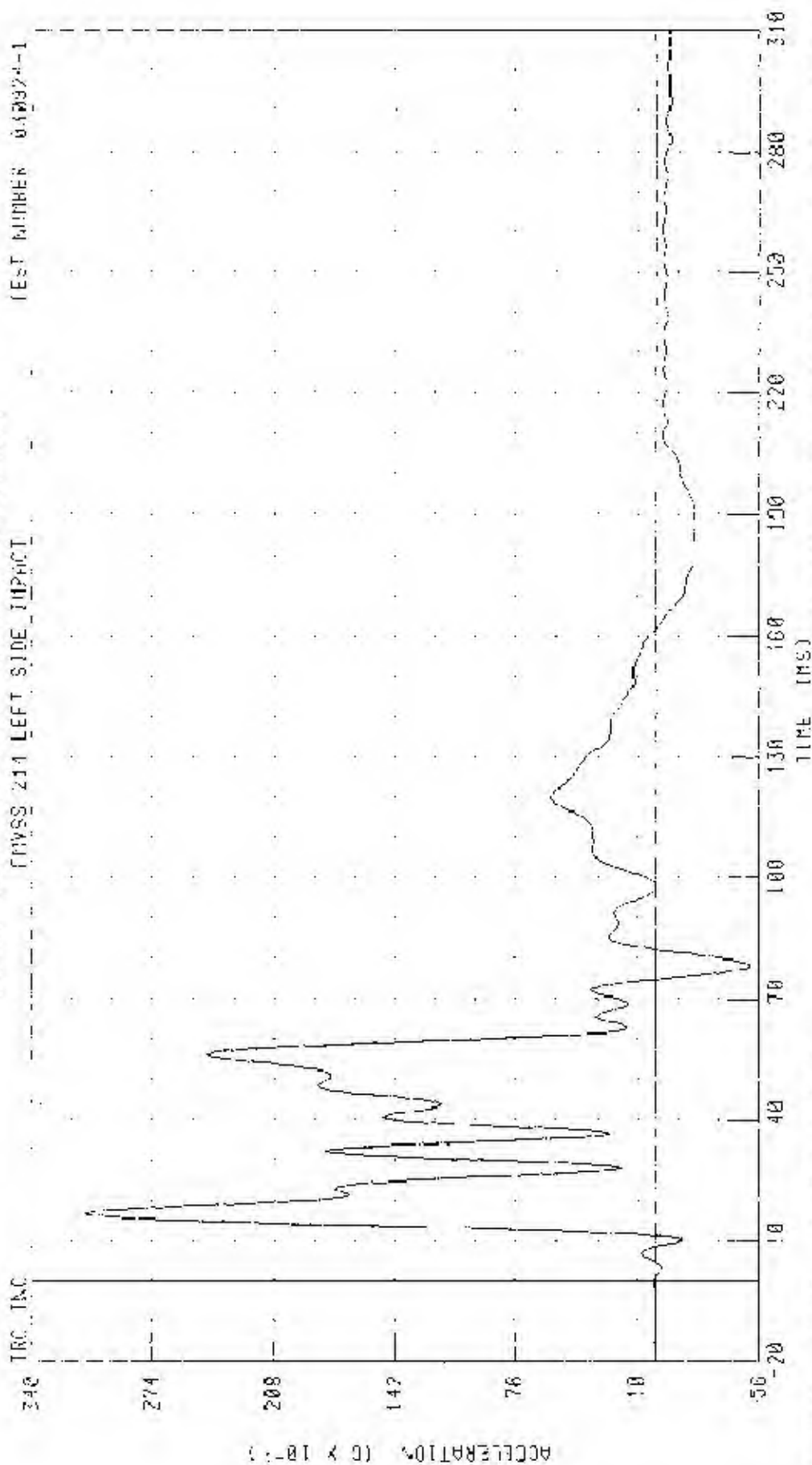
IFSI NUMBER: 030924-1



CHANNEL LURRY1 FILTER 4K 100

PEAK DATA: 27 00 0 0 53.75 MS. -7 16 0 0 40 00 MS

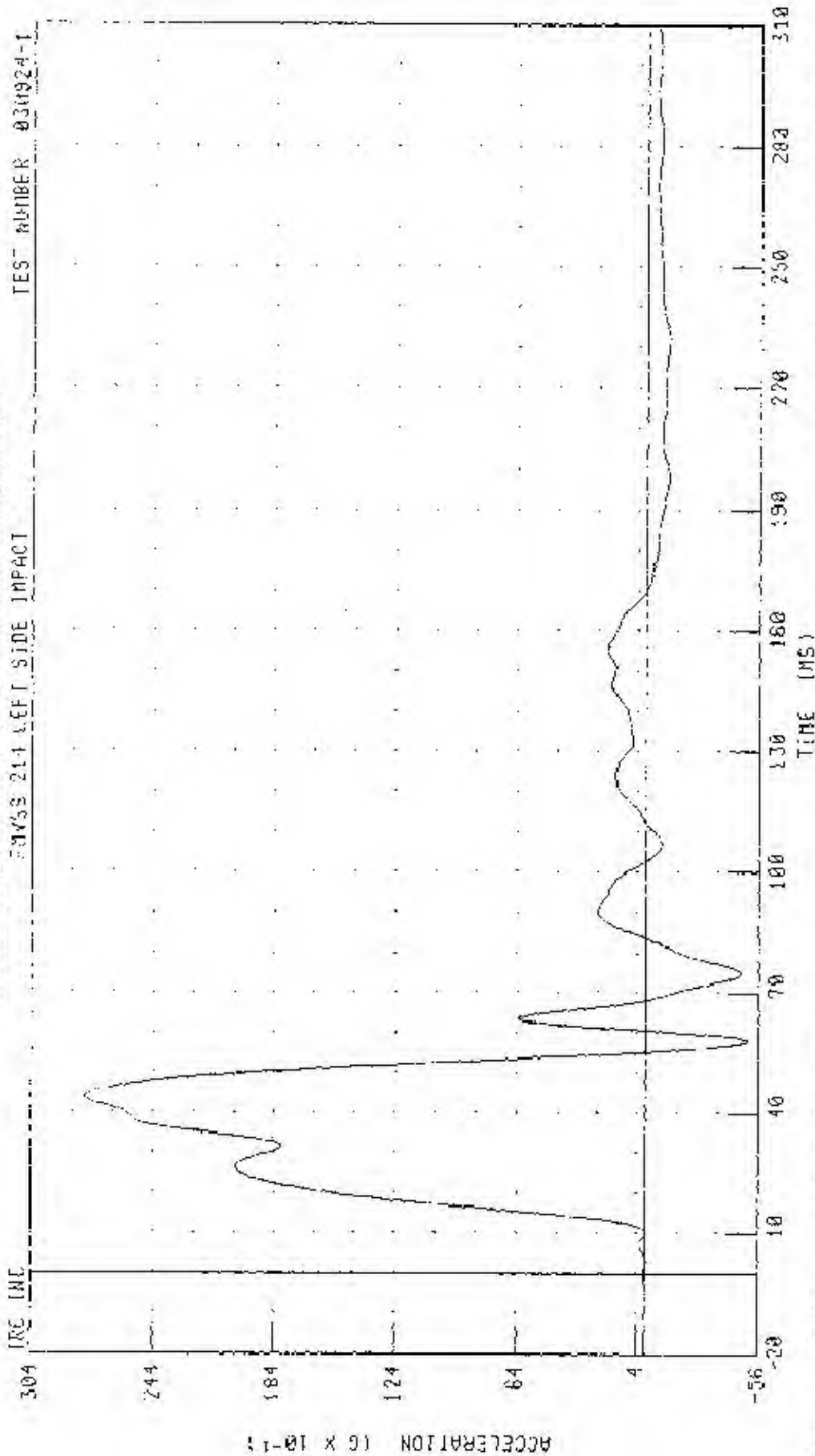
55.28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS AX330
 DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION



CHANNEL: C1R101 FILTER: FIR100

PEAK DATA 31 30 0 0 10 07 MS. 5 12 0 0 76 13 MS

55.20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BAR) INTO LEFT SIDE OF 2004 LEXUS RX330
 DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION



TEST NUMBER 030924-1

CHANNEL T12YR1 FILTER FIR 100

PEAK DATA 27.71 C @ 43.75 MS, -5.12 C @ 58.13 MS

$$I_{\text{eff}} = \frac{\sum_{i=1}^n x_i^2}{n-1},$$

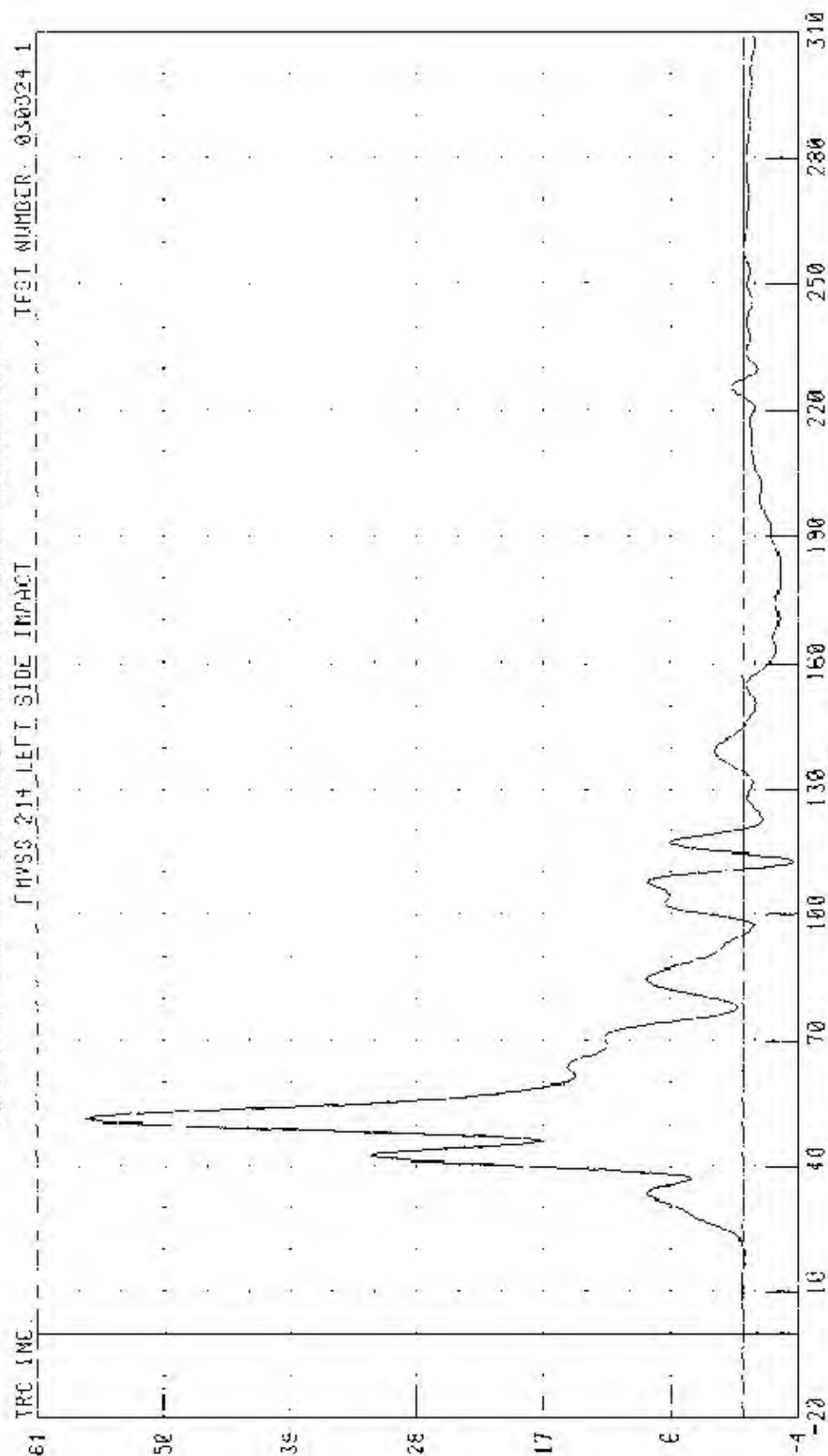

CHANGE: FEVER; FILER: FIR 100

55/26 KPH 40 DEGREE SIDE IMPACT (MOVING OFFSHOULDER BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330

LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

TEST NUMBER: 030024 1

IMPSS 214 LEFT SIDE IMPACT



CHANNEL: LURYR4 FILTER: FIR 100

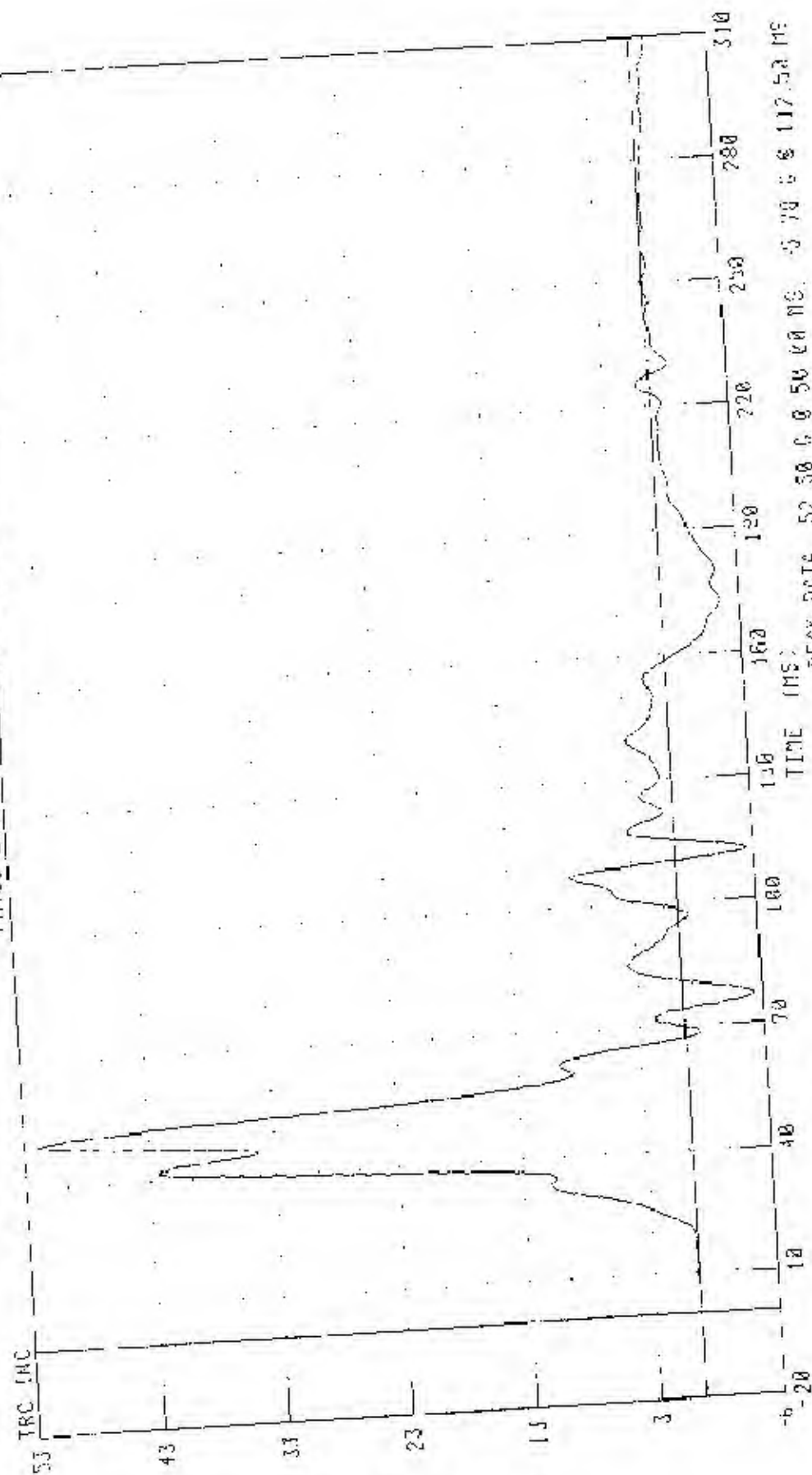
PEAK DATA: 57.13 0 0 51.25 MS, -4.30 0 0 132.50 MS

50/75 MPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE CARRIER INTO LEFT SIDE OF 2404 LEXUS RX330

LEFT REAR PASSENGER LOWER RIB Y AXIS REDUNDANT ACCELERATION

TEST NUMBER 030924-1

PHYS 214 LEFT SIDE IMPACT

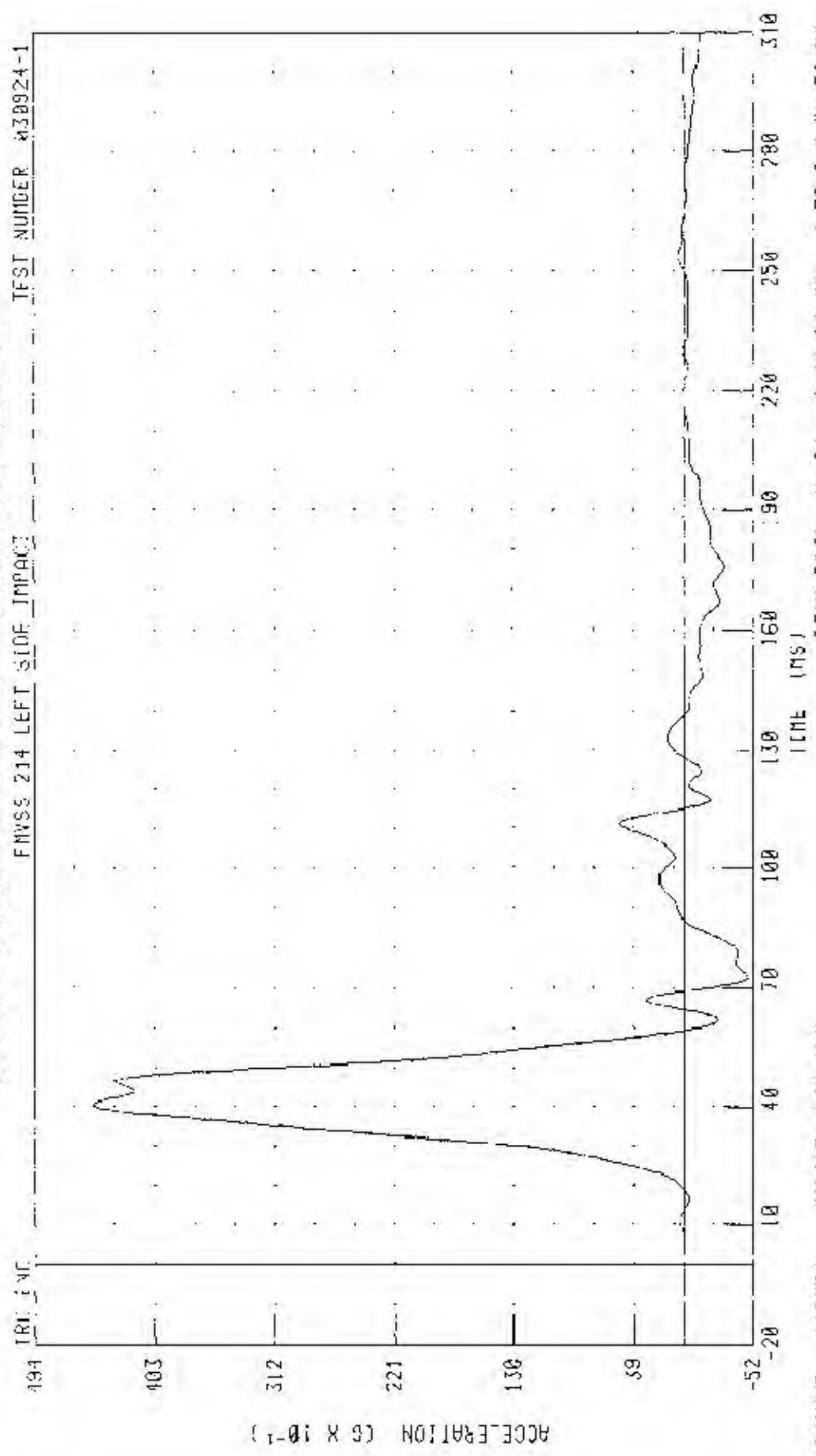


PEAK DATA 52 50 0 0 50 00 MS. 0 70 0 0 117.53 MS

CHANNEL 110YR4 FILTER FIR 100

(3) ACCELERATION (G)

55/7R KPP 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 LEXUS RX330
 LEFT REAR PASSENGER LOWER SPINE Y AXIS REDUCED ACCELERATION

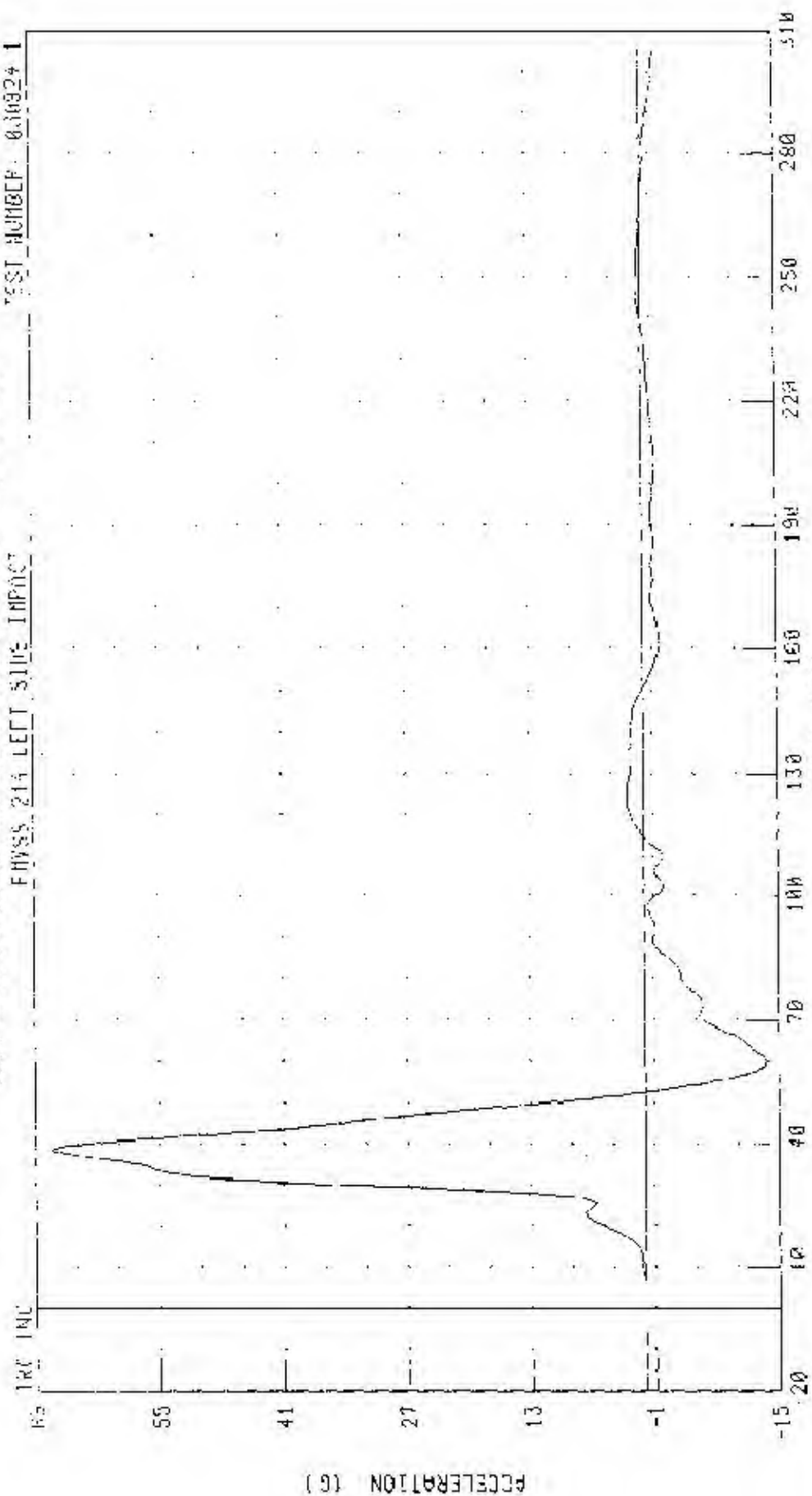


50/28 MPH ON DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2004 LEXUS RX330H

LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION

TEST NUMBER: 030924-1

EVENT 214 LEFT SIDE IMPACT



TIME (MS)

CHANNEL PEYR4 FILTER FIR 100

PEAK DATA 67.03 G @ 75 MS, -13.73 G @ 50.00 MS

Appendix C

SID HII Configuration and Performance Verification Data

Summary
SID HIII Pre-Test and Post-Test Calibration
Configured For Left Side Impact

Date: 09/24/03 TRC Inc. Test Number: S/N055 & S/N906
Laboratory Technician: Jack Willeke

Test Parameter	Specification	SID HIII 055		SID HIII 906	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - Seated Height (mm)	889-909	N/A ¹	909	901	904
RH - Rib Height (mm)	502-520	N/A ¹	511	511	506
HP - Hip Pivot Height (mm)	99 ref	N/A ¹	99.1	99.1	99.1
RD - Rib from Back Line (mm)	229-241	N/A ¹	223 ²	229	229
KH - Knee Pivot from Back Line (mm)	511-526	N/A ¹	525	513	525
KV - Knee Pivot to Floor (mm)	490-505	N/A ¹	492	496	491
HW - Hip Width (mm)	356-391	N/A ¹	366	370	384
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.1	21.7	21.1	21.1
Relative Humidity (%)	10-70	41.0	31.0	54.0	31.0
Probe Speed (m/s)	4.27-4.33	4.29	4.31	4.26	4.32
Upper Rib (g's)	37-46	40.9	38.3	37.5	42.6
Lower Rib (g's)	37-46	39.8	37.2	37.8	43.3
Lower Spine (g's)	15-22	19.3	17.0	16.1	19.7
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.1	21.1	21.1	21.1
Relative Humidity (%)	10-70	40.0	22.0	55.0	31.0
Probe Speed (m/s)	4.27-4.33	4.27	4.31	4.28	4.31
Pelvis (g's)	40-60	44.2	44.6	52.6	45.8

¹ Pre-test external dimensions were not collected.

² Did not meet specifications post-test.

Calibration Test Results

Pre-Test

SID HIII: 055

Configured for Left Side Impact

External Dimensions:	External dimensions were not taken.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was tested on September 15, 2003 for a previous calibration series.

TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDI III SID DUMMY

22-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HL05508C

572M SID/HIII SN055 HEAD CAL08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.44 deg. C
RELATIVE HUMIDITY	10 - 70 %	51.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	140.63 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-9.39 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. F. Watter

RUN NUMBER: 092703.1859;2

572N SID/HILL DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

RUN NUMBER: 092903 1208,2

572N SID/HILL SN055 HEAD CAL2B

TRC TEST NUMBER: HL05508C

120

80

40

0

-40

-80

-120

ACCELERATION (G)

100

90

80

70

60

50

40

30

20

10

0

TIME (MS X 10⁻¹)

CHANNEL: HEDXG FILTER: CH. CLASS 1000

PEAK DATA 2 90 0 0 3.52 MS; 9.39 G @ 2.16 MS

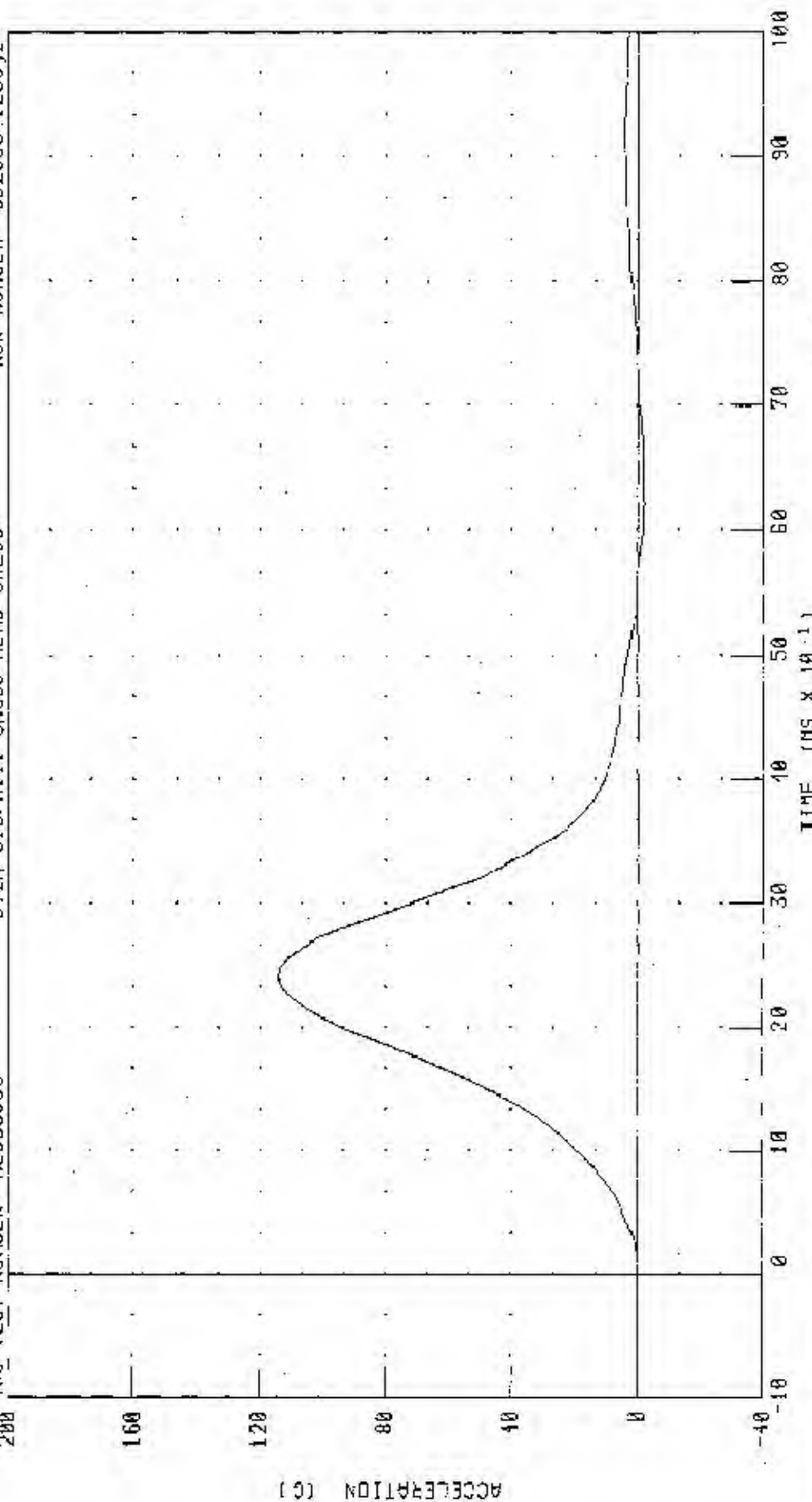
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: IIL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1200,2



CHANNEL: HEDYC FILTER: CH. CLASS 100E

PEAK DATA: 114.03 G @ 2.40 MS; -1.96 G @ 6.24 MS

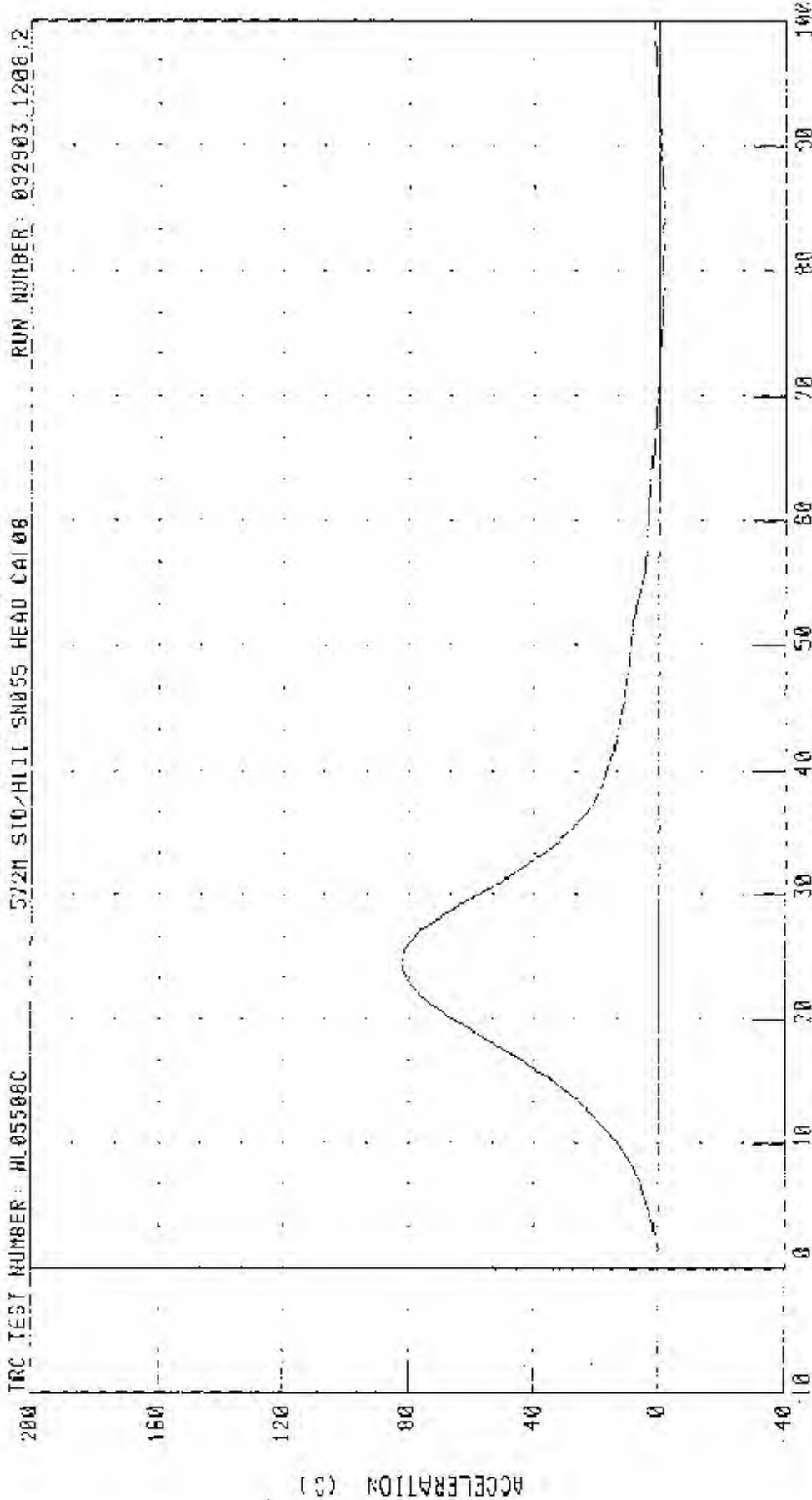
572M SID/HILL DUMKY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HL05508C

572M SID/HILL SN055 HEAD CAL06

RUN NUMBER: 092903.1200.2



TIME (MS X 10⁻¹)

CHANNEL: HEADZG

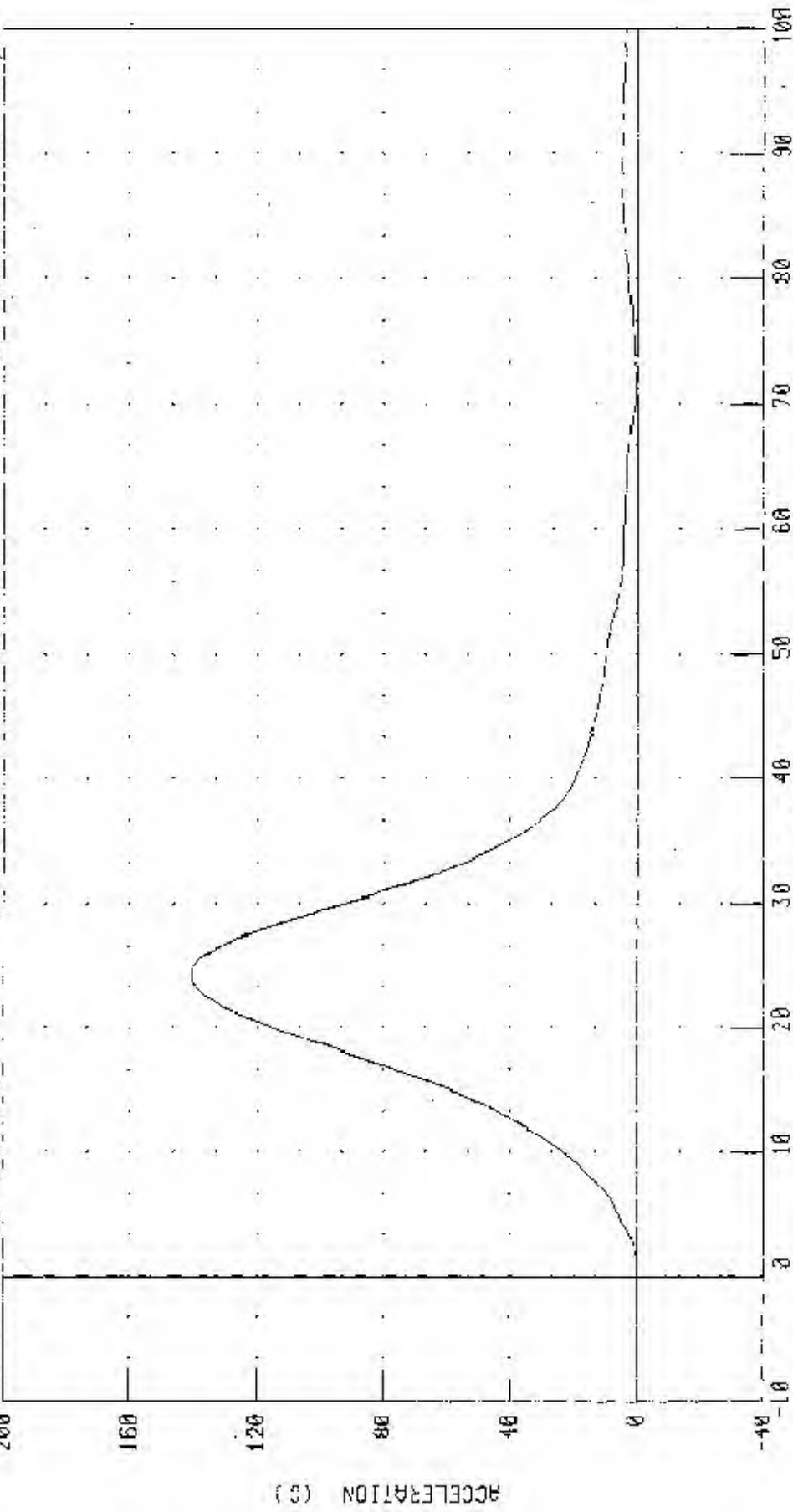
FILTER: CH. CLASS 1000

PEAK DATA: 82 06 0 0 2 48 MS; -1.44 0 0 8 32 MS

572M SID/H111 DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HL05508C 572M SID/H111 SN055 HEAD CAL00 RUN NUMBER: 092903.1200;2



CHANNEL: HEDRC FILTER: CH, CLASS 1000 PEAK DATA: 140.63 G @ 2.40 MS, 0.01 G @ 0.48 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRID III SID DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NL05508

572M SID/HIII SN055 NECK CAL08

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.39 deg. C
RELATIVE HUMIDITY		10 - 70 %	49.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.18 M/S
	20 MS	4.12 - 5.10 M/S	4.53 M/S
	30 MS	5.73 - 7.01 M/S	6.61 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.12 - 7.28 M/S
MAXIMUM NIDSAGGITAL PLANE ROTATION		66 - 82 DEG.	71.71 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	59.52 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73.0 - 88.0 NM	86.27 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	53.84 MS
TIME OF MAXIMUM ROTATION (AFTER MAXIMUM MOMENT		2 - 16 MS	10.16 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. F. Watters

RUN NUMBER: 092703.1903;1

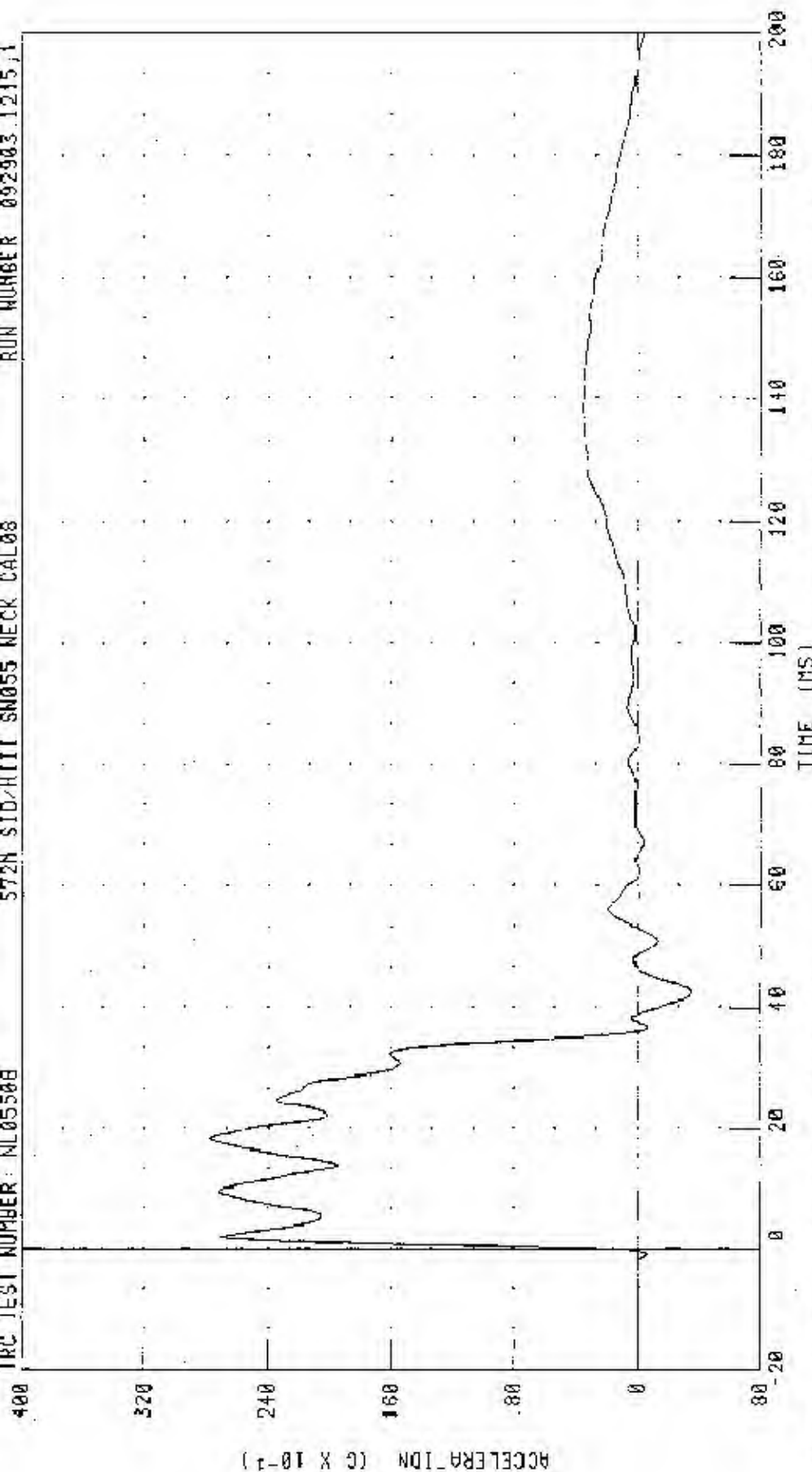
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

PENDULUM DECELERATION

TRC TEST NUMBER: NL05508

572N SID/HIII SN055 NECK CAL08

RUN NUMBER 092903.1215.1



CHANNEL: PENXG FILTER: CH CLASS 180

PEAK DATA: 27.67 G @ 10.40 MS, -3.53 G @ 42.40 MS

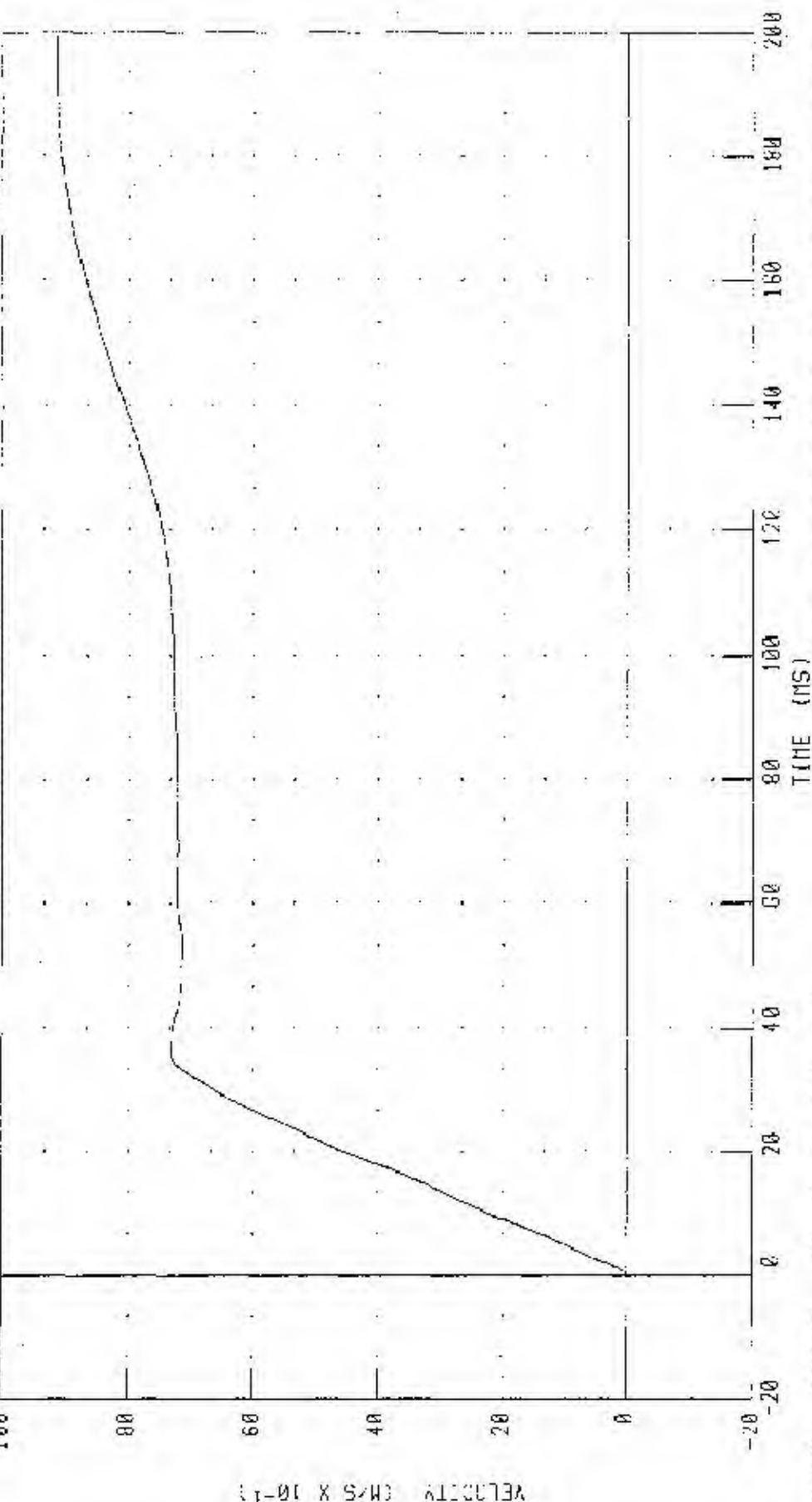
5721 H3/SID DUMMY CALIBRATION LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

IRC TEST NUMBER: NI05508

572M SID/H/II SN055 NECK CAL08

RUN NUMBER: 092903.1215.1



CHANNEL: PENNY FILTER: CH CLASS 180

PEAK DATA: 8.14 M/S @ 194.10 MS, -0.01 M/S @ 0.40 MS

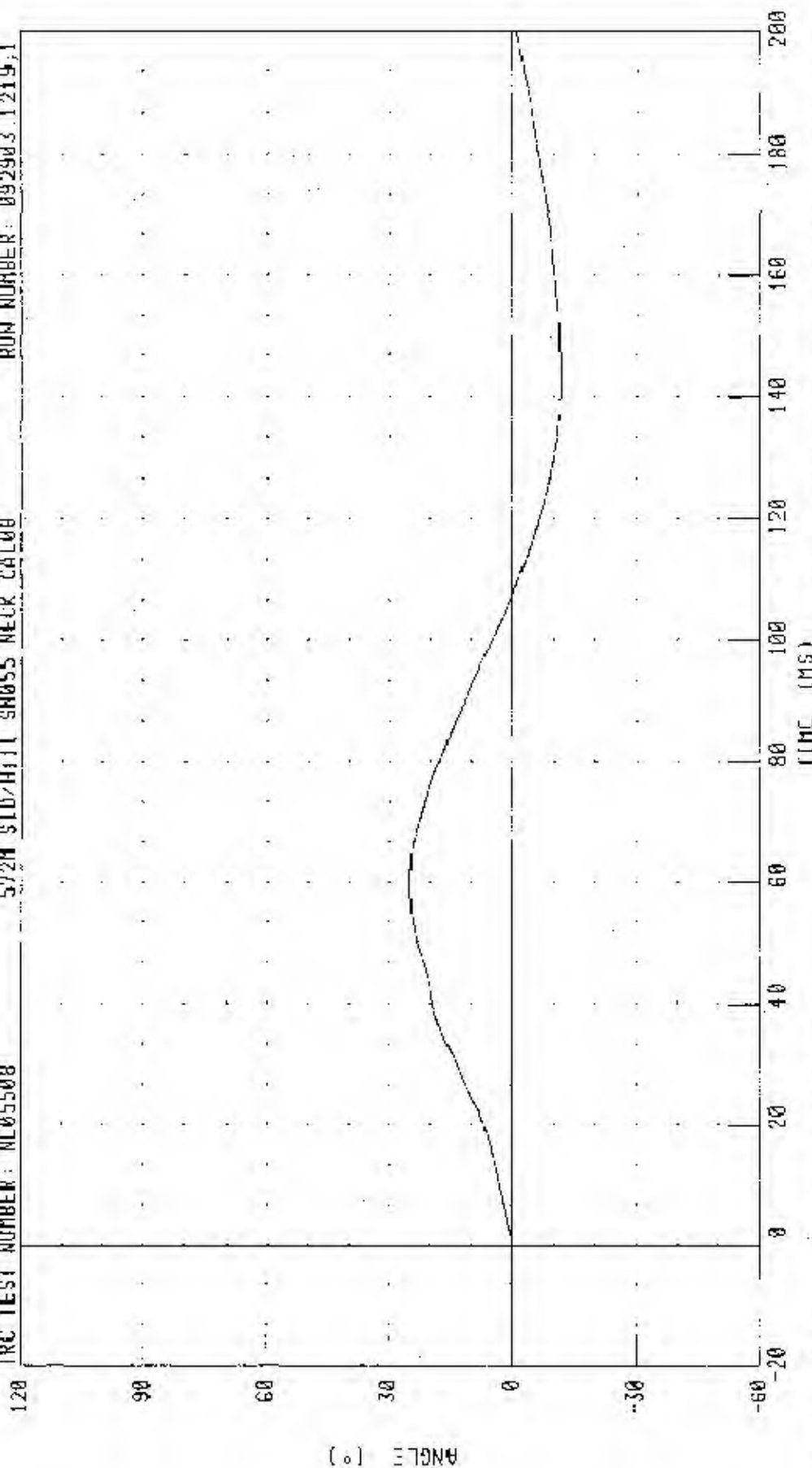
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

IRC TEST NUMBER: NL05508

572M SID/H311 SN055 NECK CAL08

RUN NUMBER: 092903.1219.1



CHANNEL: BETA

FILIER: CH CLASS 60

PEAK DATA: 25.03 ± 0.59.84 NS, -11.77 ± 0.143.52 NS

ANGLE (°)

030924-1

C-12

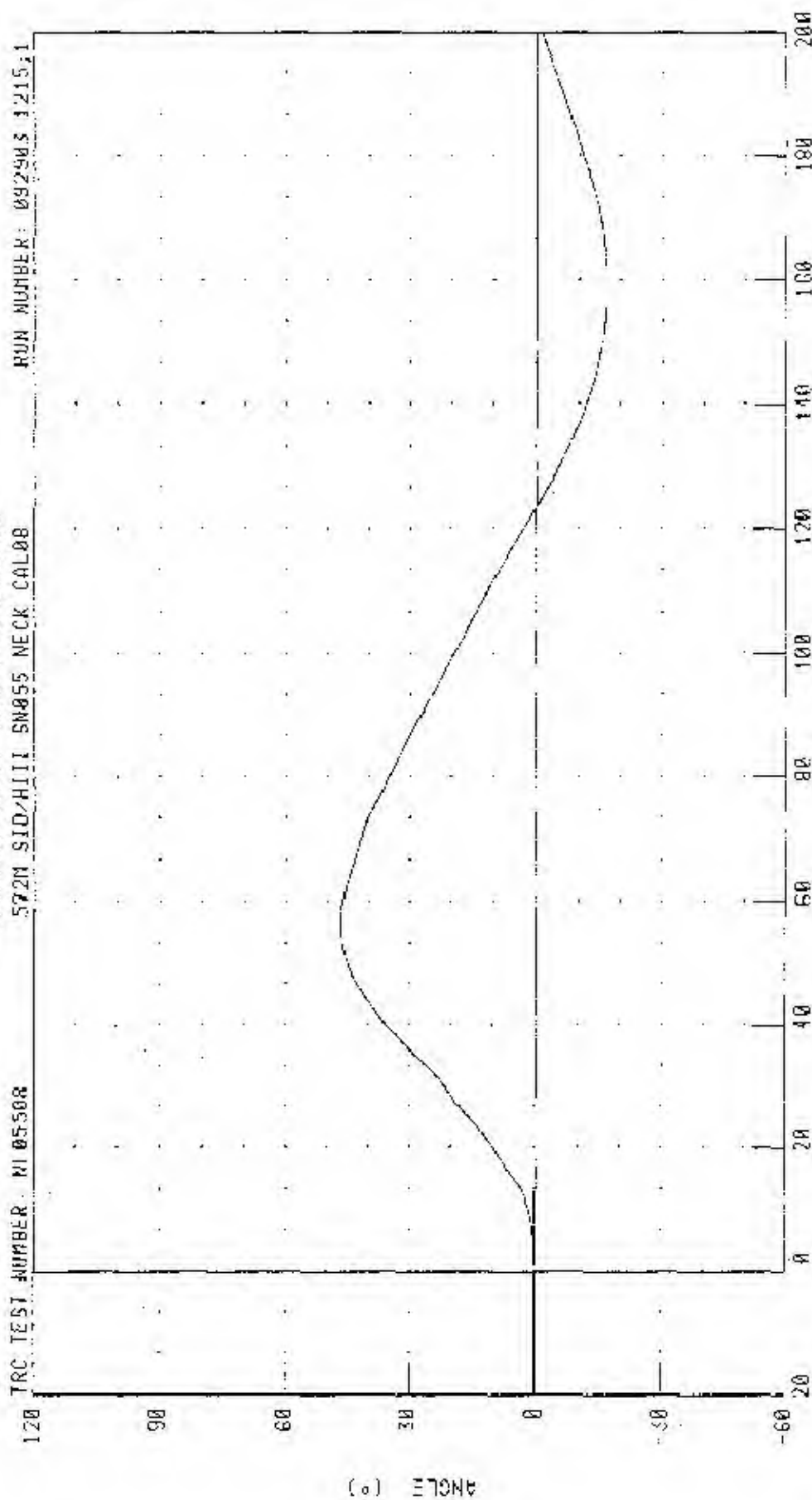
572M 113/STD DUMPY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

572M SID/HIII SW055 NECK CAL08

TRC TEST NUMBER: MI 05508

RUN NUMBER: 092903 1215.1



TIME (MS)

CHANNEL: MULTA

FILTER: CH CLASS 60

PEAK DATA: 45.78 @ 57.04 MS, -15.01 @ 150.06 MS

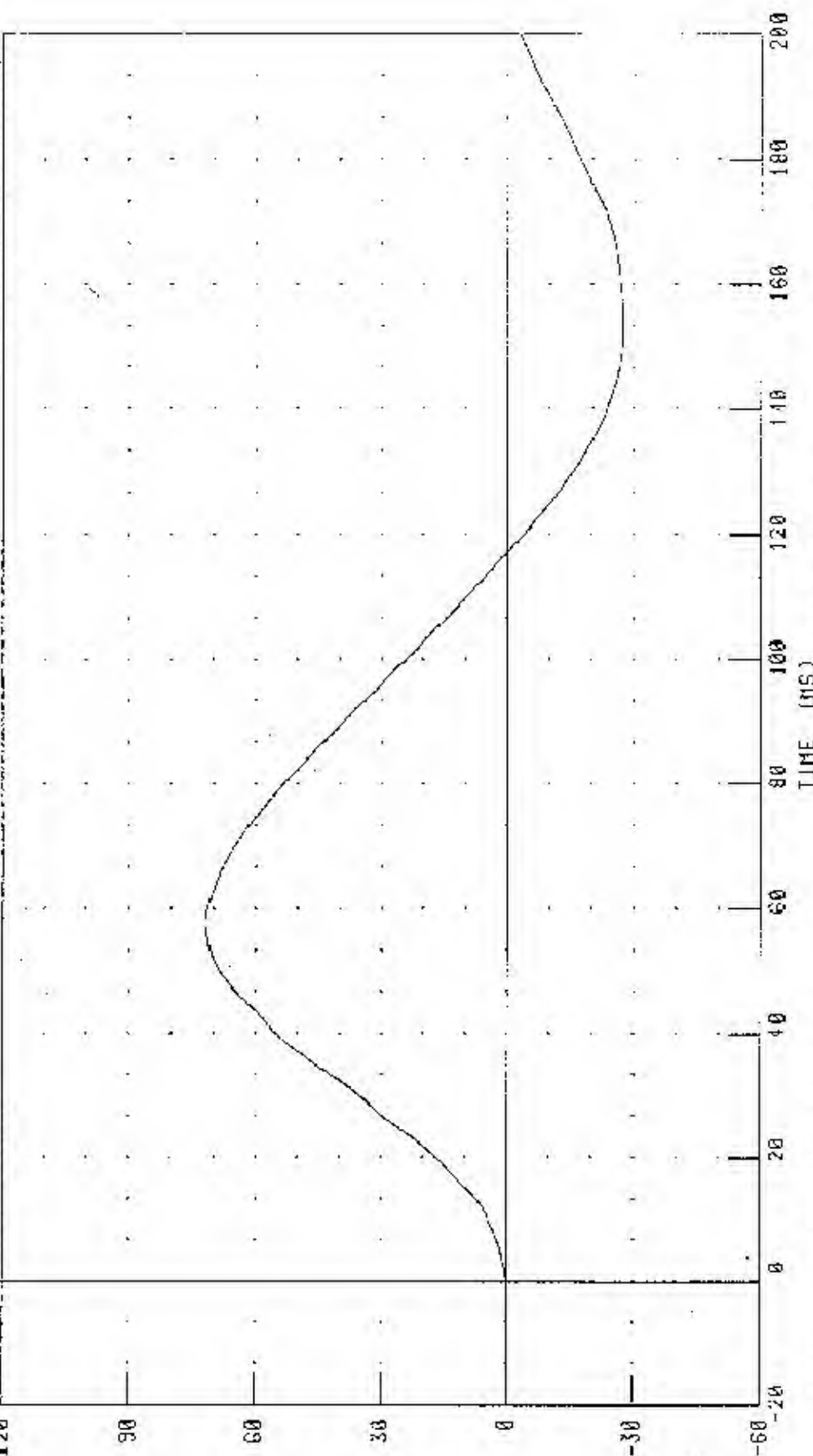
572H H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

IRC TEST NUMBER: NL05500

572H SID/HILL SN055 NECK CAL00

RUN NUMBER 002003.1215.1



PEAK DATA:

71.71 ° @ 57.76 MS, 27.49 ° @ 153.20 MS

CHANNEL TOTAL FILTER: CH. CLASS 60

ANGLE (°)

572M H3/SID DUMMY CALIBRATION -- IFFI LATERAL NECK TEST

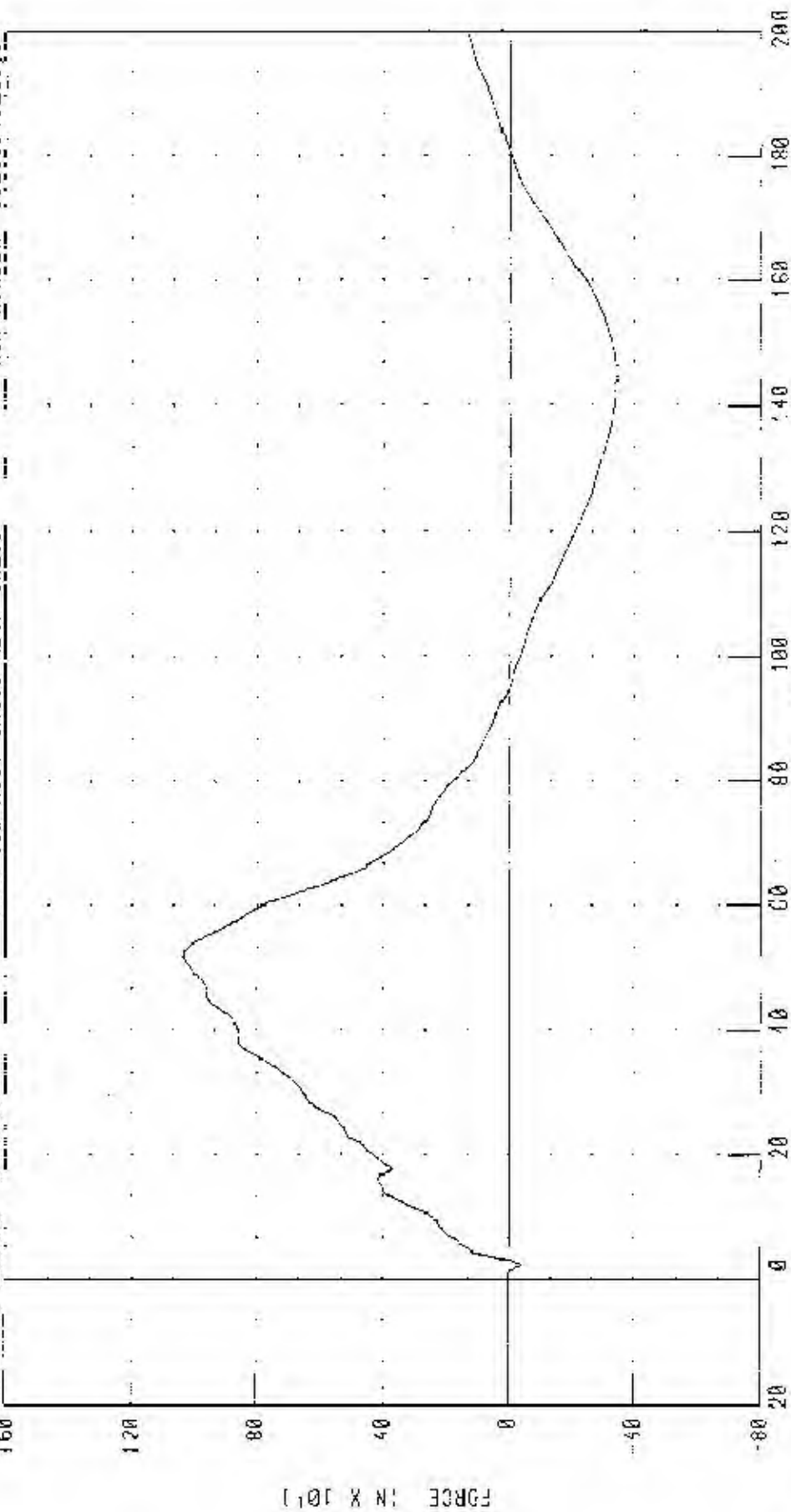
NECK FORCE V AXIS

TRC TEST NUMBER NL05508

572M SID/HILL SN055 NECK CAL08

RUN NUMBER 092903

1215.1



TIME (NS)

PEAK DATA: 1034 29 N @ 51.84 NS; -346.63 N @ 143.92 NS

CHANNEL: MEKYE FILTER: CH. CLASS 1000

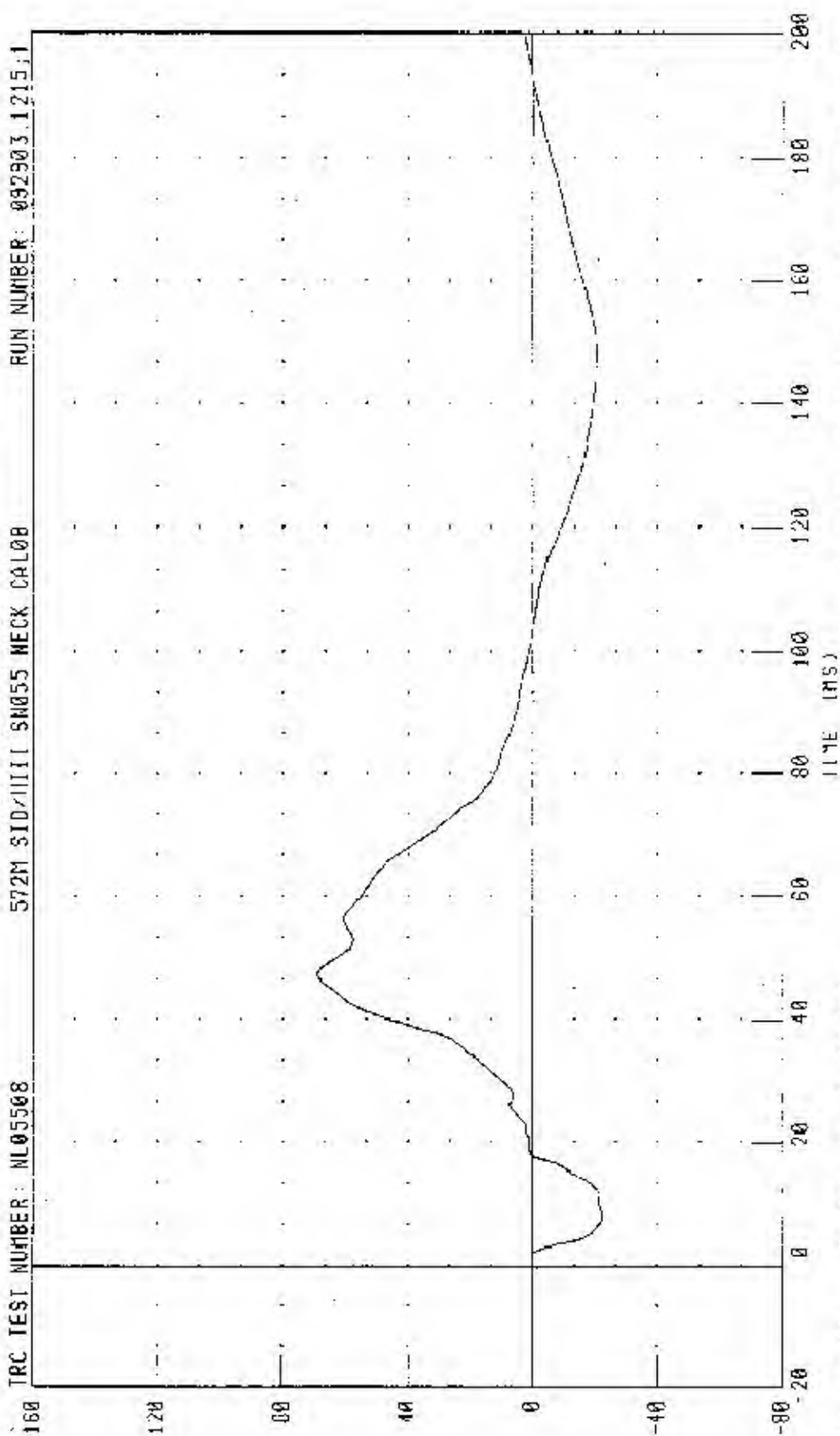
572M M3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NL05508

572M SID/M3/SID SN055 NECK CAL08

RUN NUMBER: 092903.1215.1



CHANNEL: NEKXN FILTER: CH. CLASS 600

PEAK DATA: 69 MS N H 47 44 MS, 22 ST N H 0 0 64 MS

(N-M) TORQUE

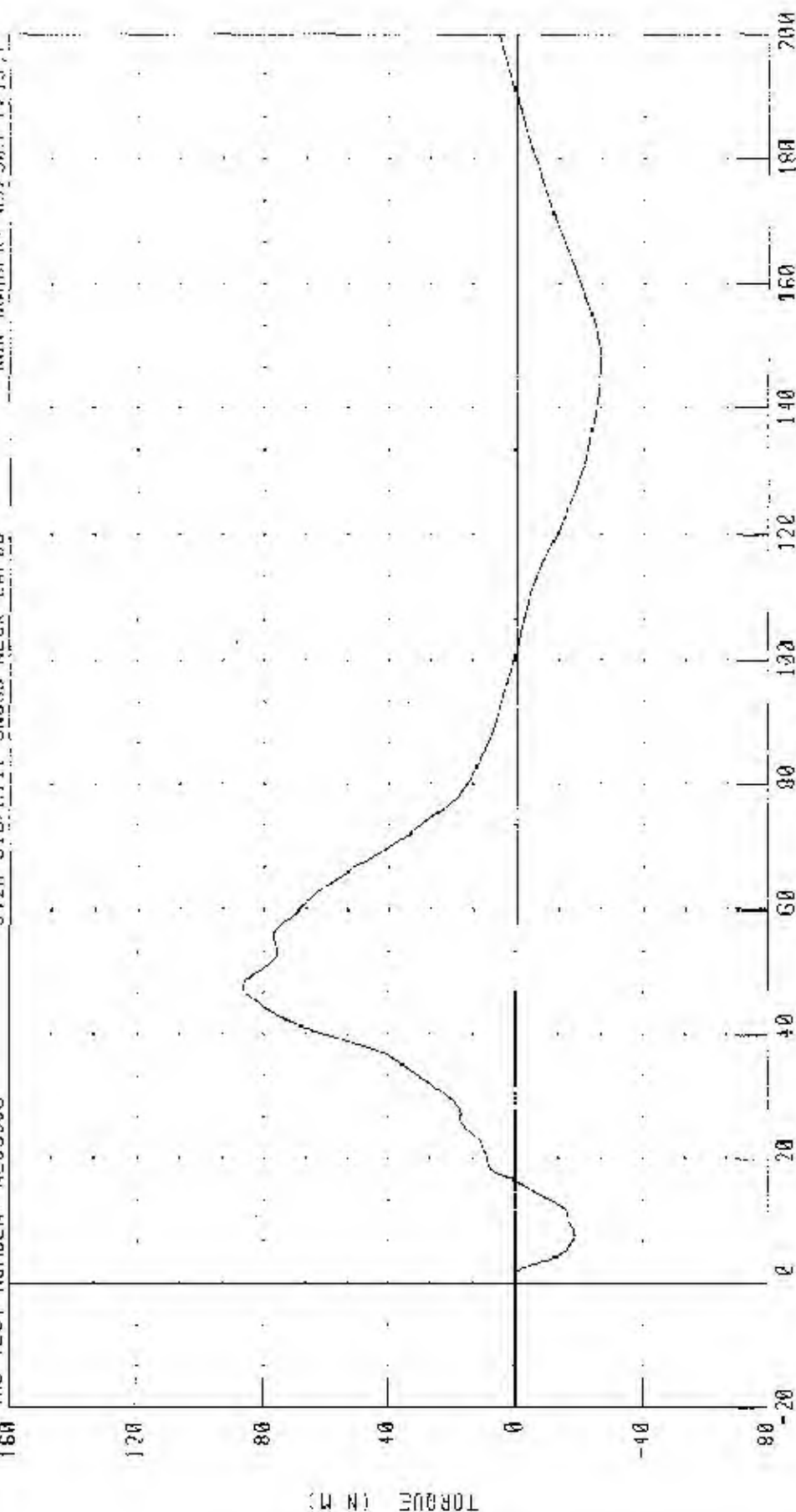
572M IIS/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NL05500

572M SID/EITL SN055 NECK CALIB

RUN NUMBER: 092903 1215.1



TIME (MS)

CHPANEL: NEKOM FILTER: CH. CLASS 600

PLAK DATA: 86.27 N M B 17 60 MS: -26 30 N M B 147 20 MS

TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HUI

CAL DATE: 23-Sep-03

TRC, INC. TEST NO: LF05508C SID/HUI SN 055 TORSO FLEX CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.2 °C
RELATIVE HUMIDITY	10 – 70 %	51 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	129.0 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	169.0 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	206.8 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	3 °

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. Z. Watson

Transportation Research Center Inc.

572B Abdomen Compression Test

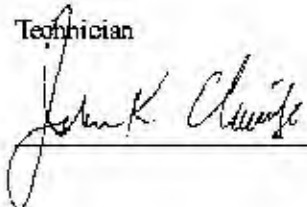
STD HIII Serial No. 055 Calibration No. 08 - 4

Test Date 02/28/2003

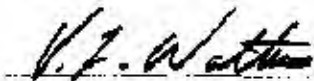
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.8 - 7.9 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



09.23.2003 15:52:58 45

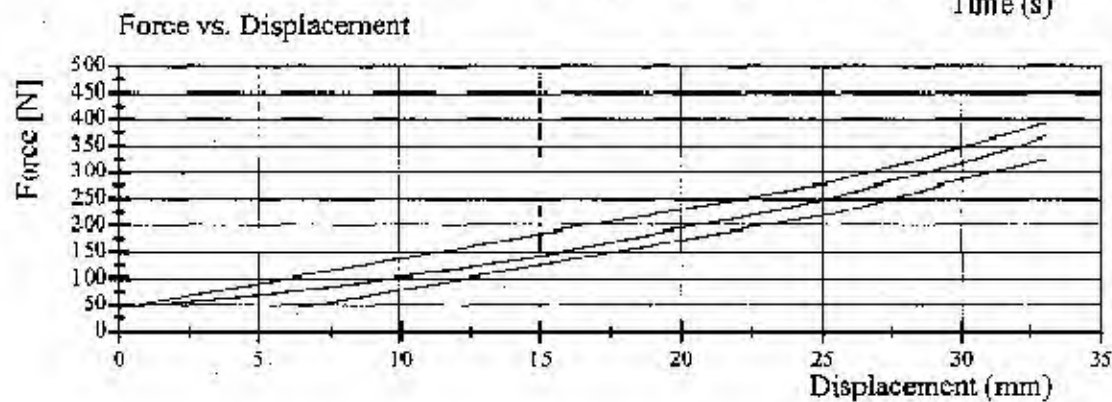
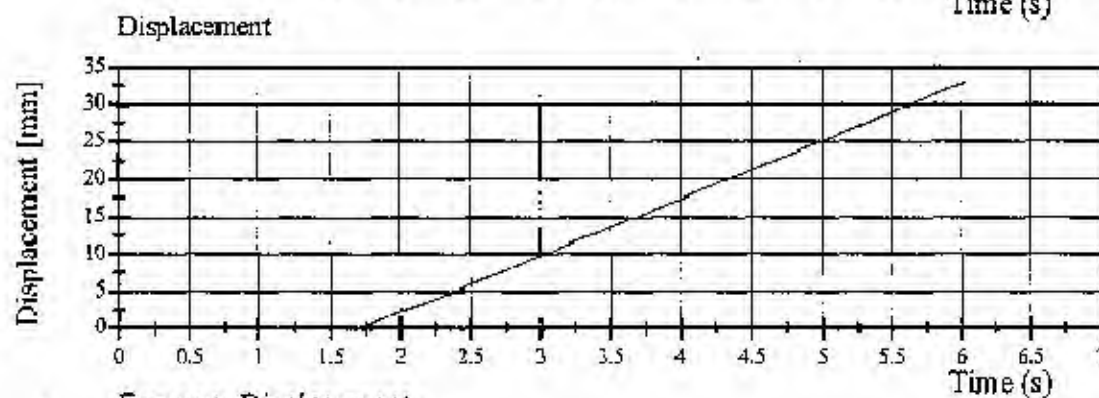
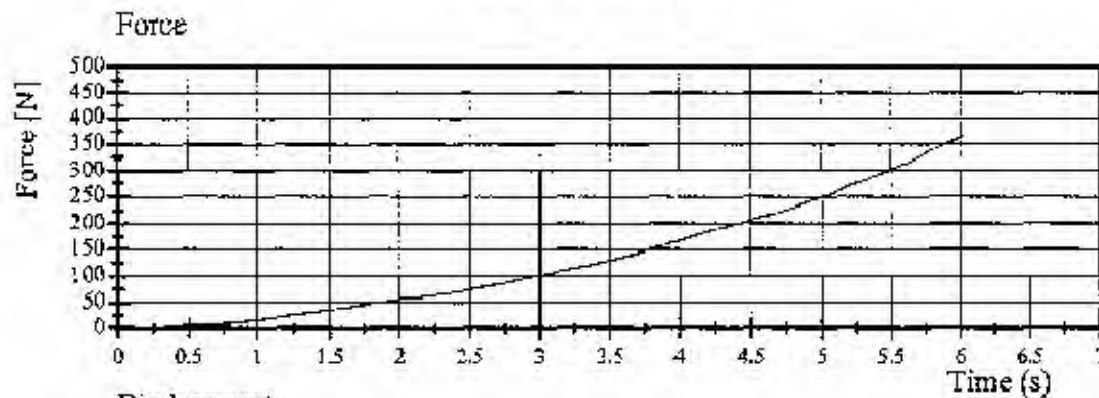


Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 055 Calibration No. 08 - 4

Test Date 02/28/2003



09.23.2003 15:52:59 45



TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

15-SEP-03

TRC INC.

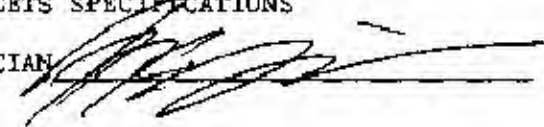
572F SNO55 DAMPER TEST CAL07

TEST NUMBERS: DP05507A, DP05507B, DP05507C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	65.0 %
VELOCITY	FORCE	667 - 925 N	806 N
2.74 M/S	DISPLACEMENT	29.7 - 34.5 MM	29.8 MM
VELOCITY	FORCE	1706 - 2072 N	1858 N
4.24 M/S	DISPLACEMENT	31.6 - 37.2 MM	32.8 MM
VELOCITY	FORCE	4116 - 4880 N	4562 N
6.38 M/S	DISPLACEMENT	33.5 - 39.8 MM	36.0 MM

DAMPER SETTING = 6.5

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 091503.1426;1

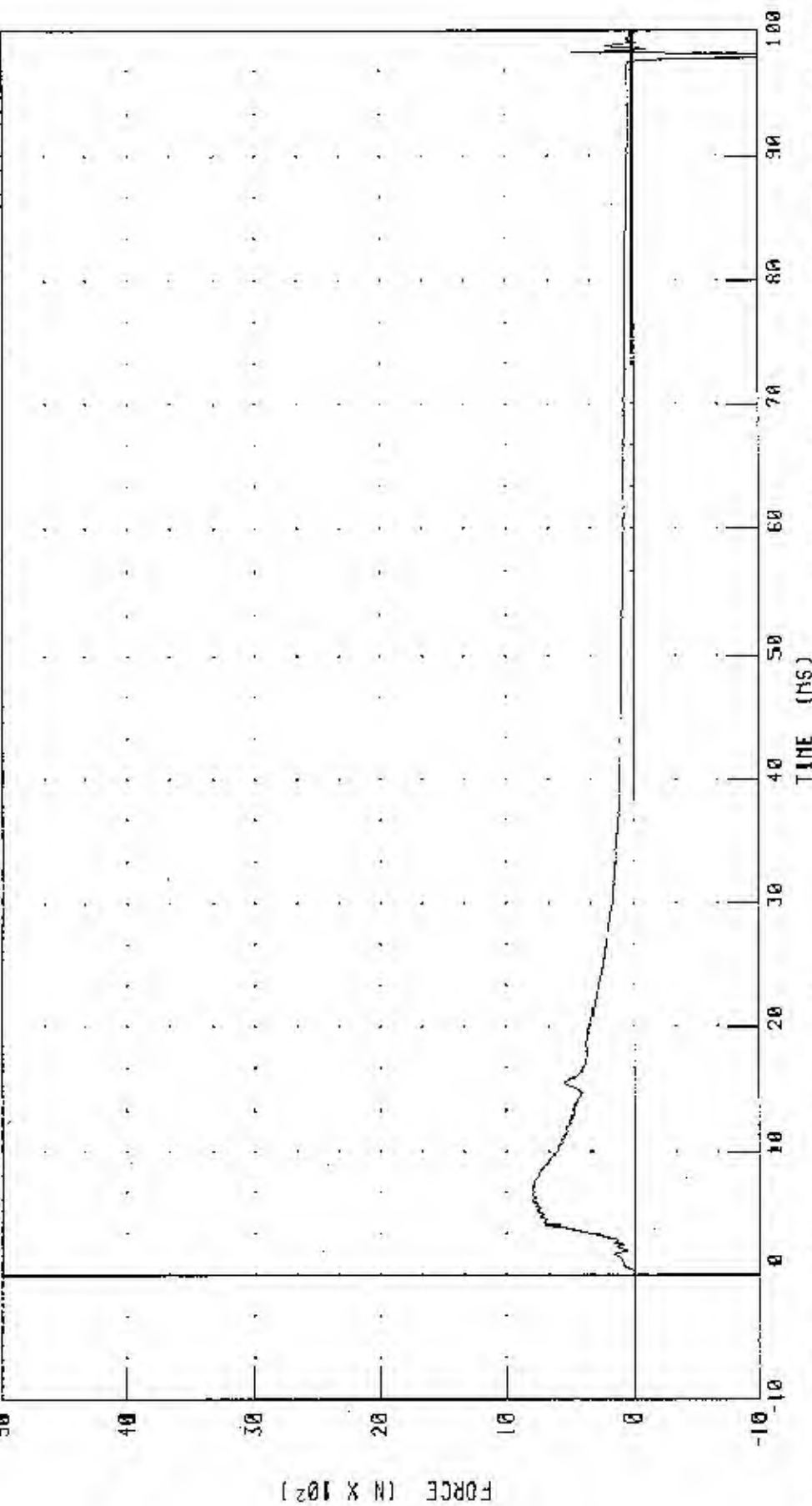
PART 572-F S.I.D THORACIC SHOCK ABSORBER CALIBRATION (3.0 N/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507A

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427.1



CHANNEL: DAMPF FILTER: CH. CLASS 1000

PEAK DATA: 805.97 N @ 6.48 MS; -2638.27 N @ 97.92 MS

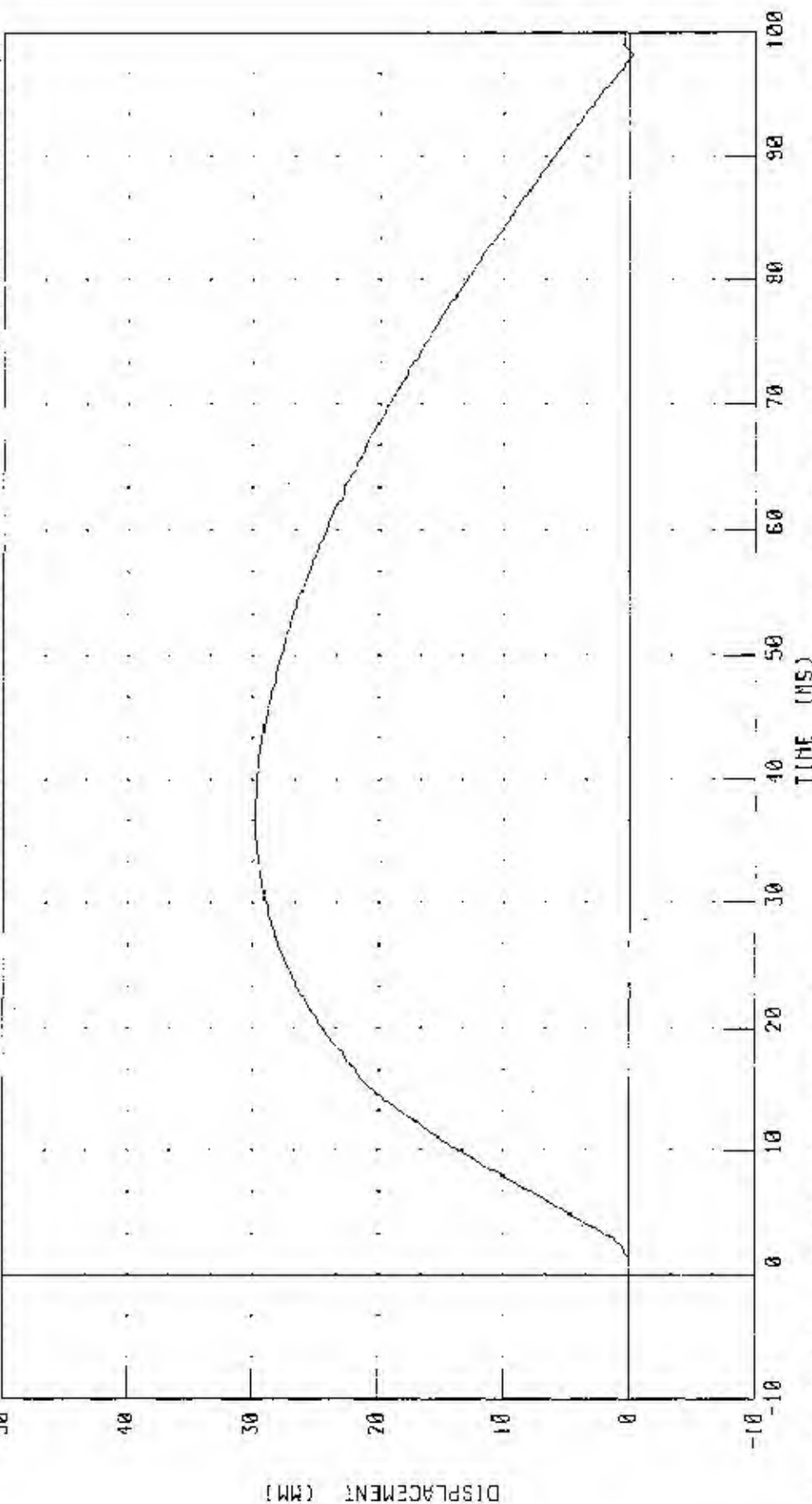
PART 572-4 S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC.)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507A

572F SN055 DAMPER TEST CAL 02

RUN NUMBER 091503.1427.1



CHANNEL: CSTYO FILTER: CH. CLASS 1000

PEAK DATA: 29 76 MM @ 35 92 MS; -0.24 MM @ 98 16 MS

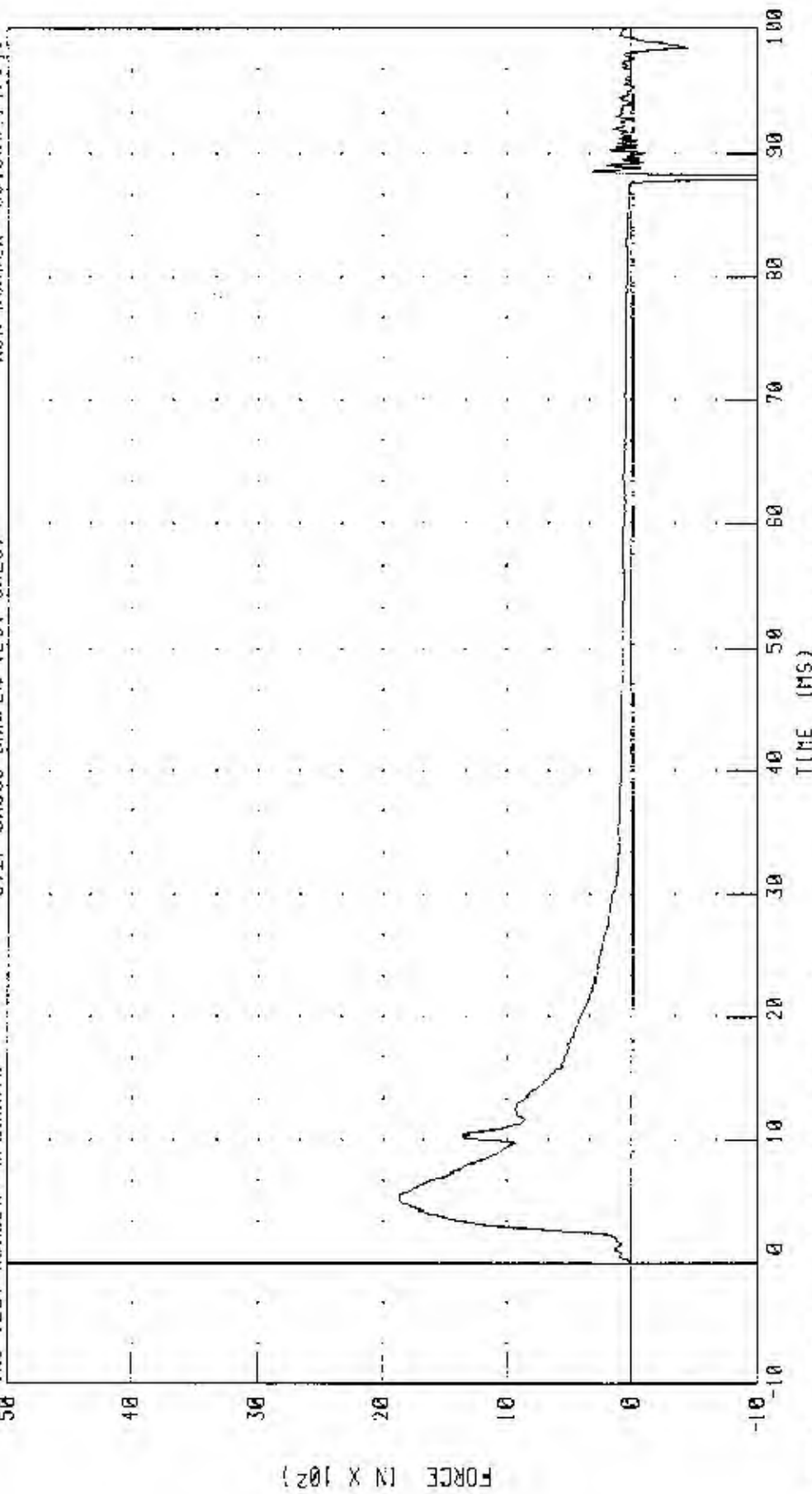
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: 0P05507B

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427.1



CHANNEL: DAMPF FILTER: CII CLASS 1000

PEAK DATA: 1857.92 N @ 5.36 MS, 2550.33 N @ 88.00 MS

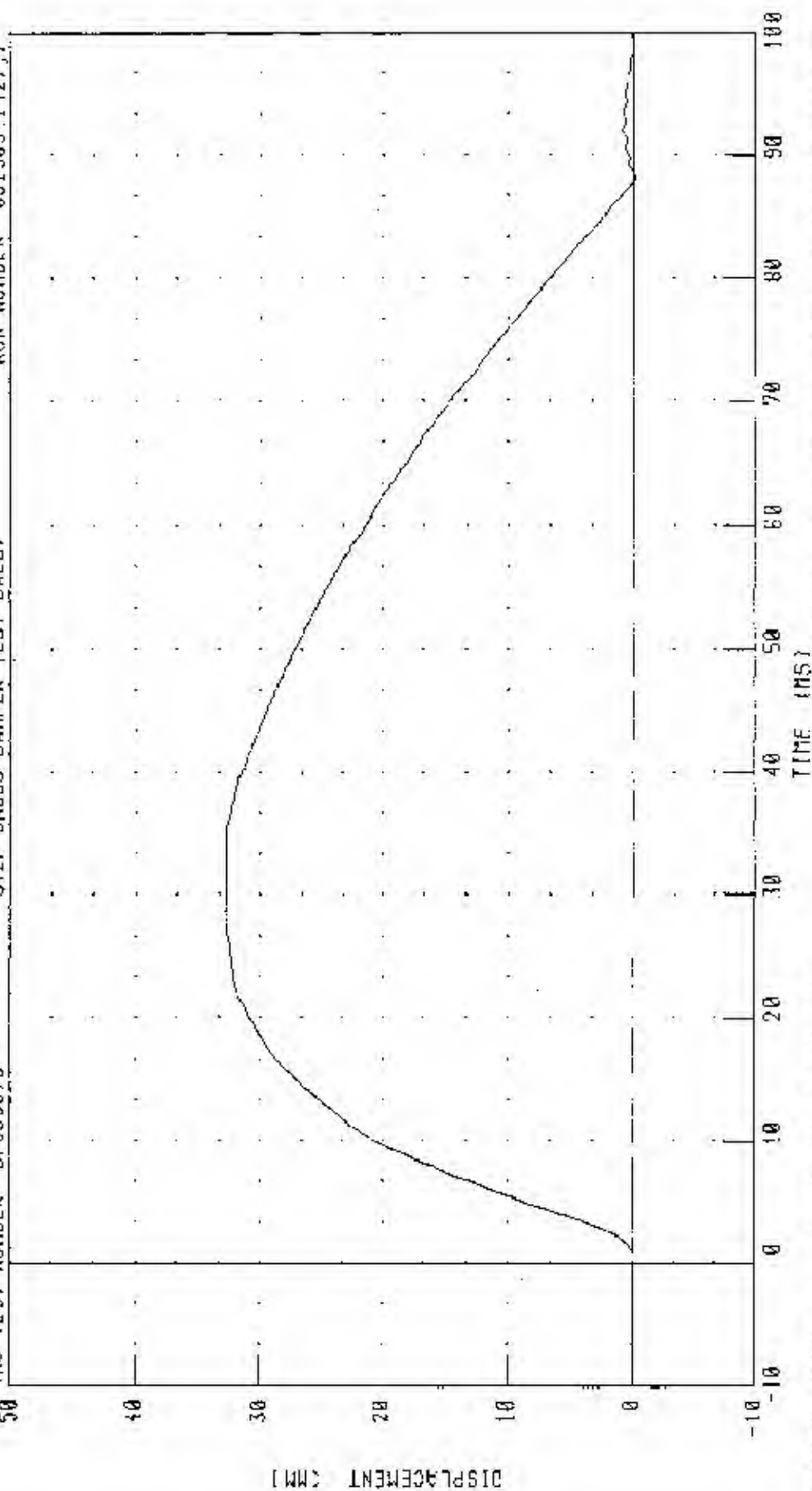
PART 572-F 5.1.0 THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507B

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427.1



TIME (MS)

CHANNEL: CSTDYD FILTER: CH. CLASS 1000

PEAK DATA 32.77 MM @ 31.20 MS, -0.25 MM @ 98.24 MS

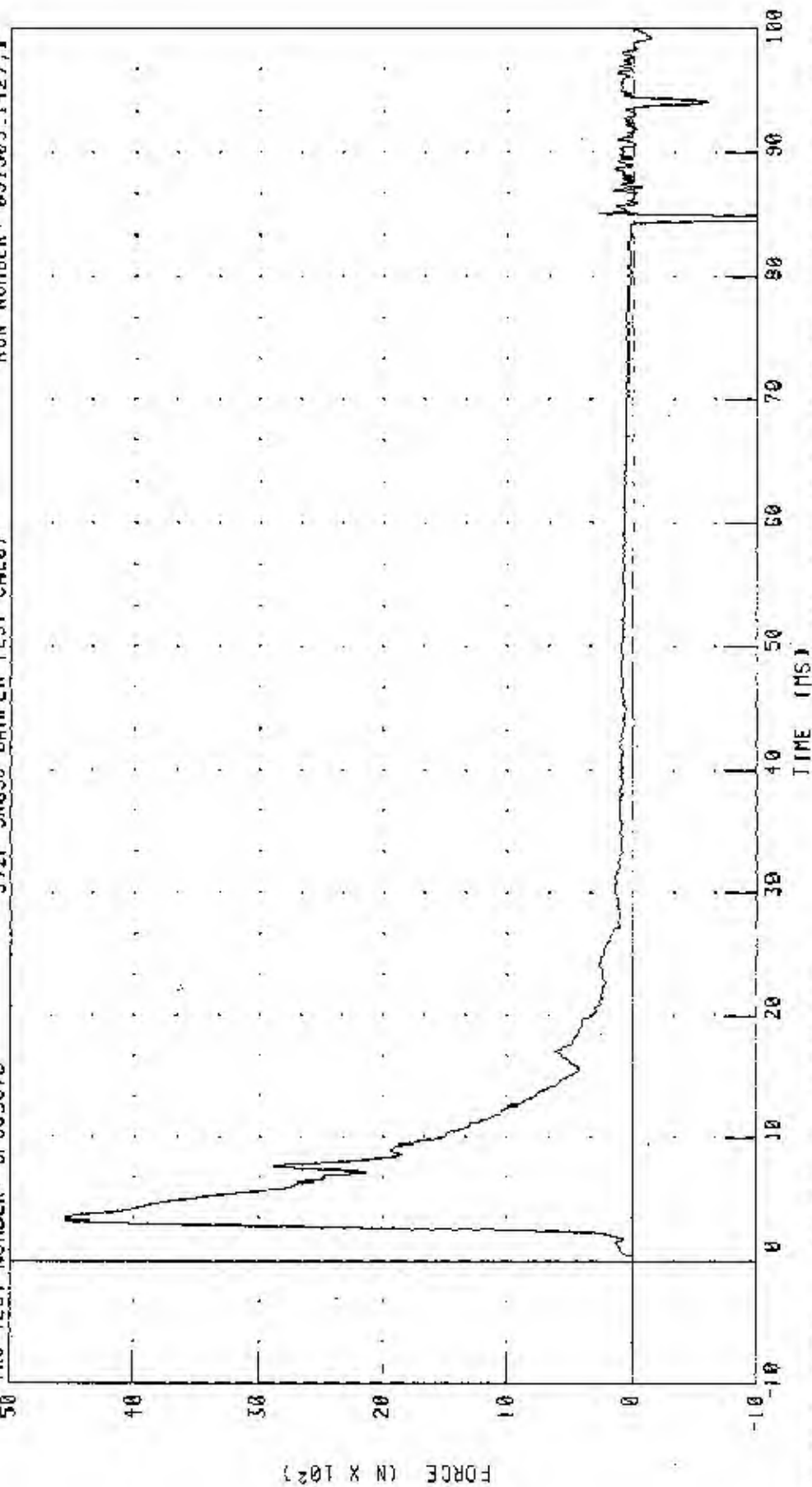
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507C

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



PEAK DATA: 4562.46 N @ 3.28 MS; -2683.85 N @ 84.72 MS

CHANNEL: DAMPE FILTER CH CLASS 1000

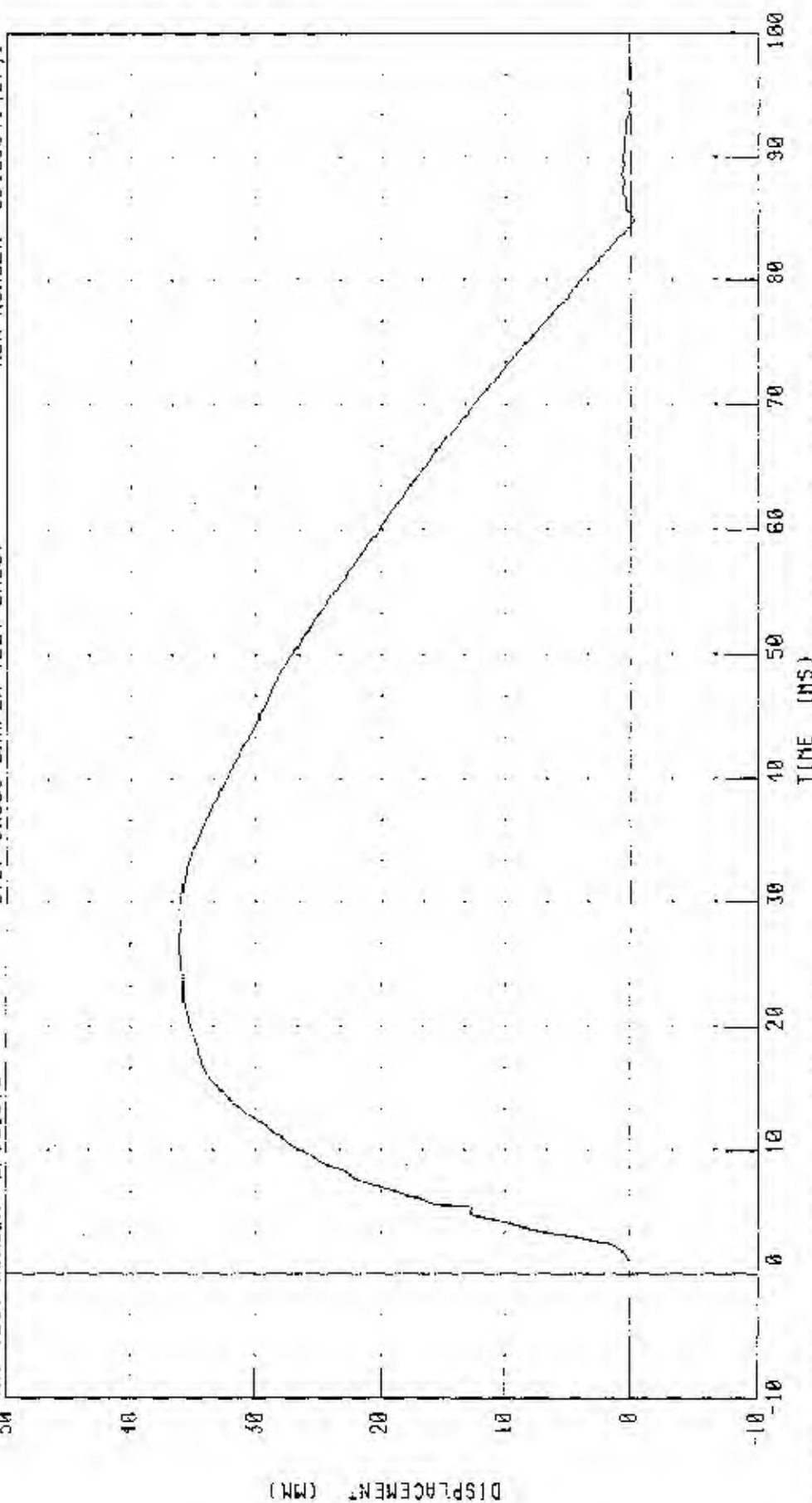
PART 572 F S I O. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507C

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



TIME (MS)

PEAK DATA: 35.97 MM @ 27.76 MS; -0.28 MM @ 84.88 MS

CHANNEL: CSTYO FILTER CH. CLASS 1000

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL05508

SID/R3 SN055 L.THORAX CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	41.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.29 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	40.9 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	39.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	19.3 G

TEST MEETS SPECIFICATIONS

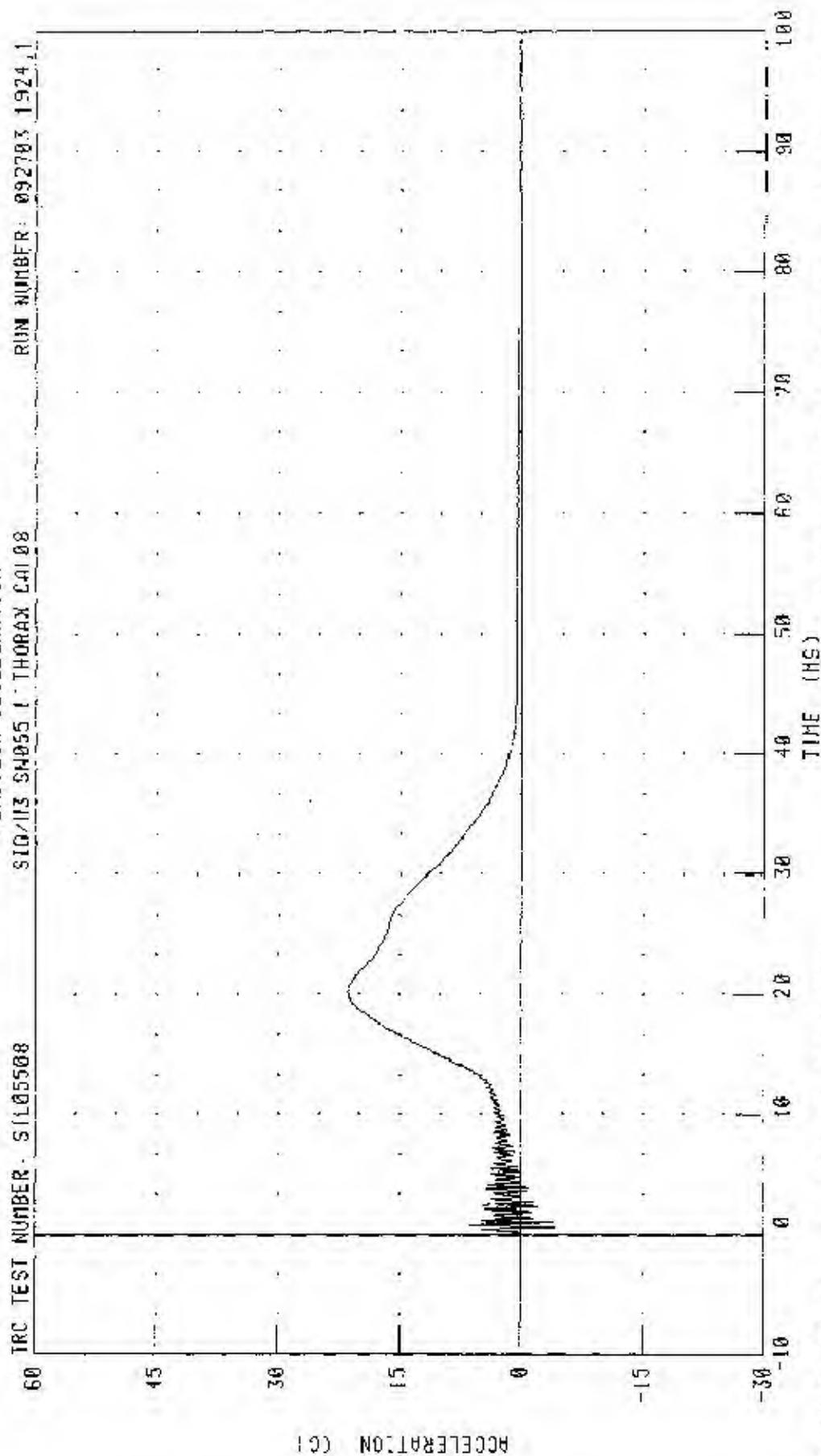
TECHNICIAN

V. J. Wether

RUN NUMBER: 092703.1924;1

PART 572-F S.I.D. THORAX CALIBRATION (LEFT SIDE IMPACT)

PENDULUM DECELERATION



CHANNEL: PENXG FILTER: CH. CLASS 1000

PEAK DATA: 21.40 G @ 20.24 MS; 4.13 G @ 0.64 MS

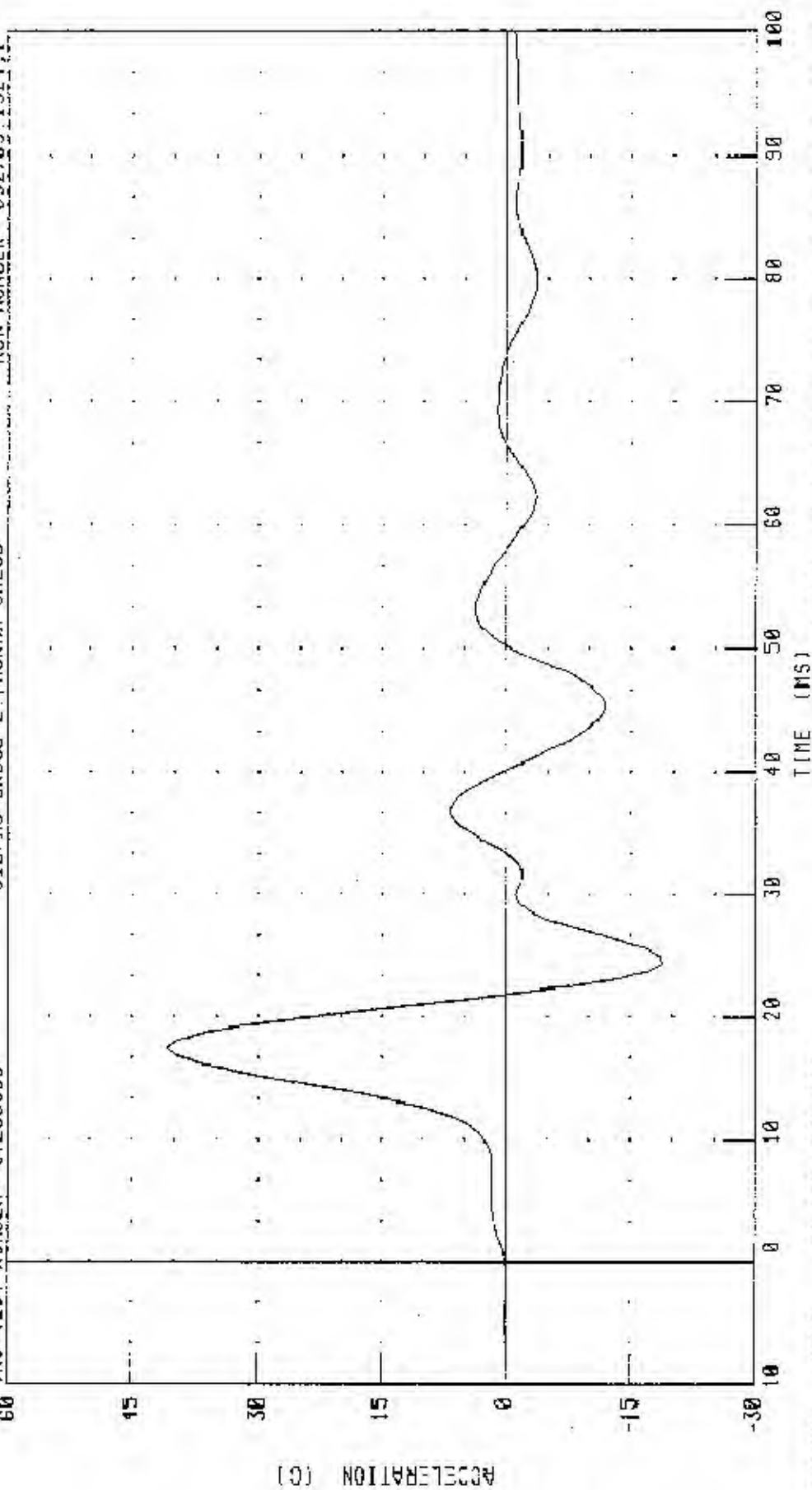
PART 572-F S I D THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

IRC TEST NUMBER: STL05508

S10/H3 SN055 L THORAX CAL08

RUN NUMBER: 092703 1924.1



CHANNEL: LURYC FILTER: FIR 100

PEAK DATA: 40.85 G @ 17.50 MS; -18.76 G @ 24.30 MS

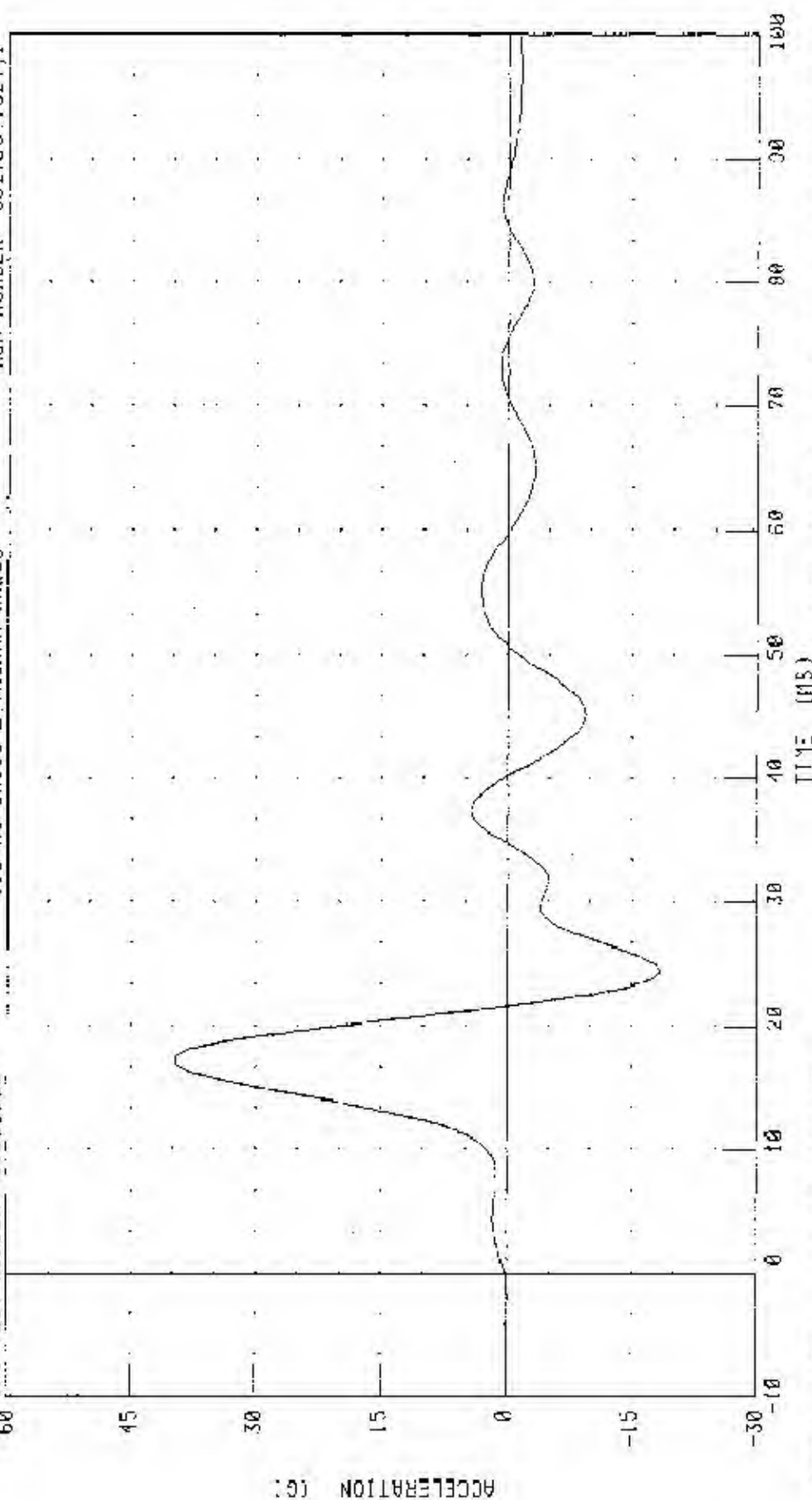
PART 572-F S.E.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

IRC TEST NUMBER STL05500

SID/H3 GN055 L THORAX CAL00

RUN NUMBER: 092703.1924.1



CHANNEL: LLRYG JULIEN: FIR 100

PEAK DATA: 39.75 G @ 17.50 MS, -10.52 G @ 24.38 MS

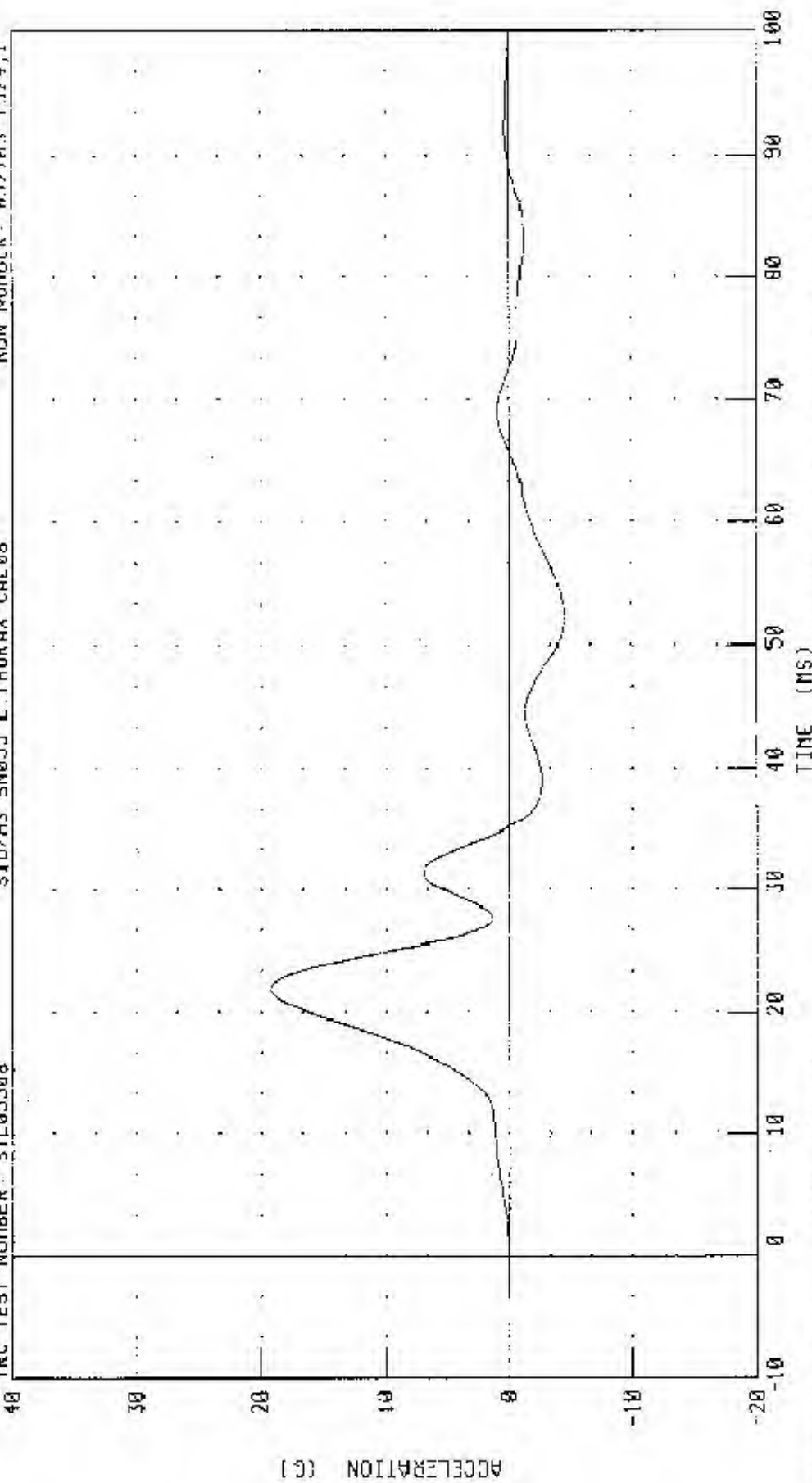
PART 572-F S I D THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

INC TEST NUMBER: ST105508

SID/H3 SN055 L THORAX CAL08

RUN NUMBER: 092703 1924.1



CHANNEL: 12YC FILTER: FIR 100

PEAK DATA 19 25 0 21.88 MS; -1 15 0 52.58 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL05508

SID/H3 SN055 LEFT PELVIS CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	40.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.27 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	44.2 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. J. Walter

RUN NUMBER: 092703.1916;1

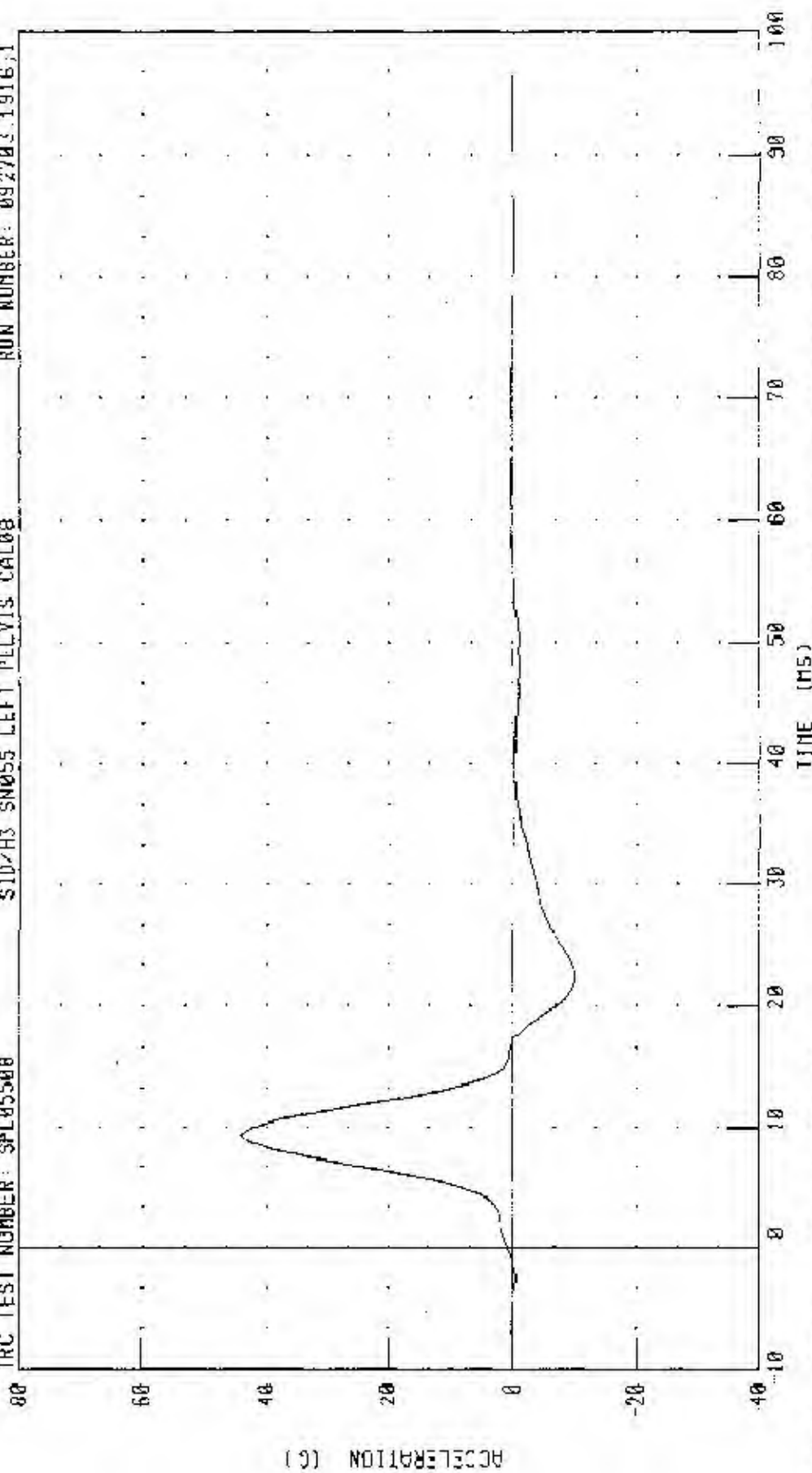
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL05500

SID/H3 SN055 LEFT PELVIS CAL08

RUN NUMBER: 092703 1916,1



TIME (MS)

CHANNEL: PEVYG FILTER: FIR 100

PEAK DATA: 44 17 15 0 9 37 MS, -9 98 0 0 22 50 MS

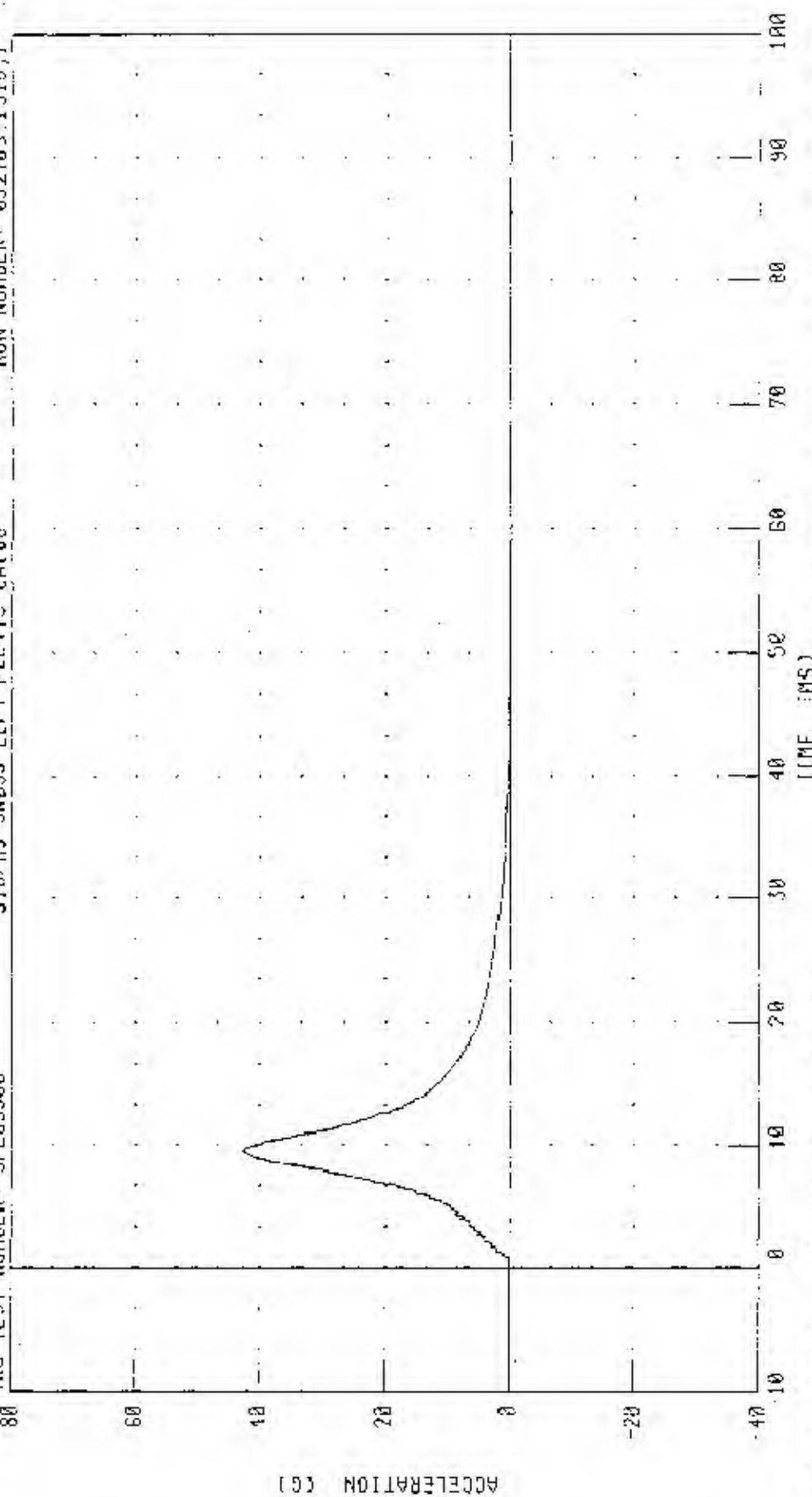
PART 572-F S.I.U. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL05508

SID/H3 SW055 LEFT PELVIS CAL08

RUN NUMBER: 092703.1916.1



CHANNEL PENXG FILTER: CH CLASS 1000

PEAK DATA: 42.76 G @ 9.52 MS, -0.10 G @ 51.12 MS

Calibration Test Results

Pre-Test

SID III: 906

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber passed all test requirements.

Transportation Research Center Inc.
SID/HIII Dummy
External Dimensions
Serial No. 906 Calibration No. 02

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	901 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	511 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	229 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	513 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	496 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	370 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	172 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	173 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	1.0 mm	Yes

Technician

John K. Chandler

Approved

V. J. Walter



TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY

12-SEP-03

LEFT SIDE CONFIGURATION


TRC INC.

TEST NO. HDL90602

572M SID/IIII SN906 HEAD CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.11 deg. C
RELATIVE HUMIDITY	10 - 70 %	62.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	131.10 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	8.74 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 100203.0721;1

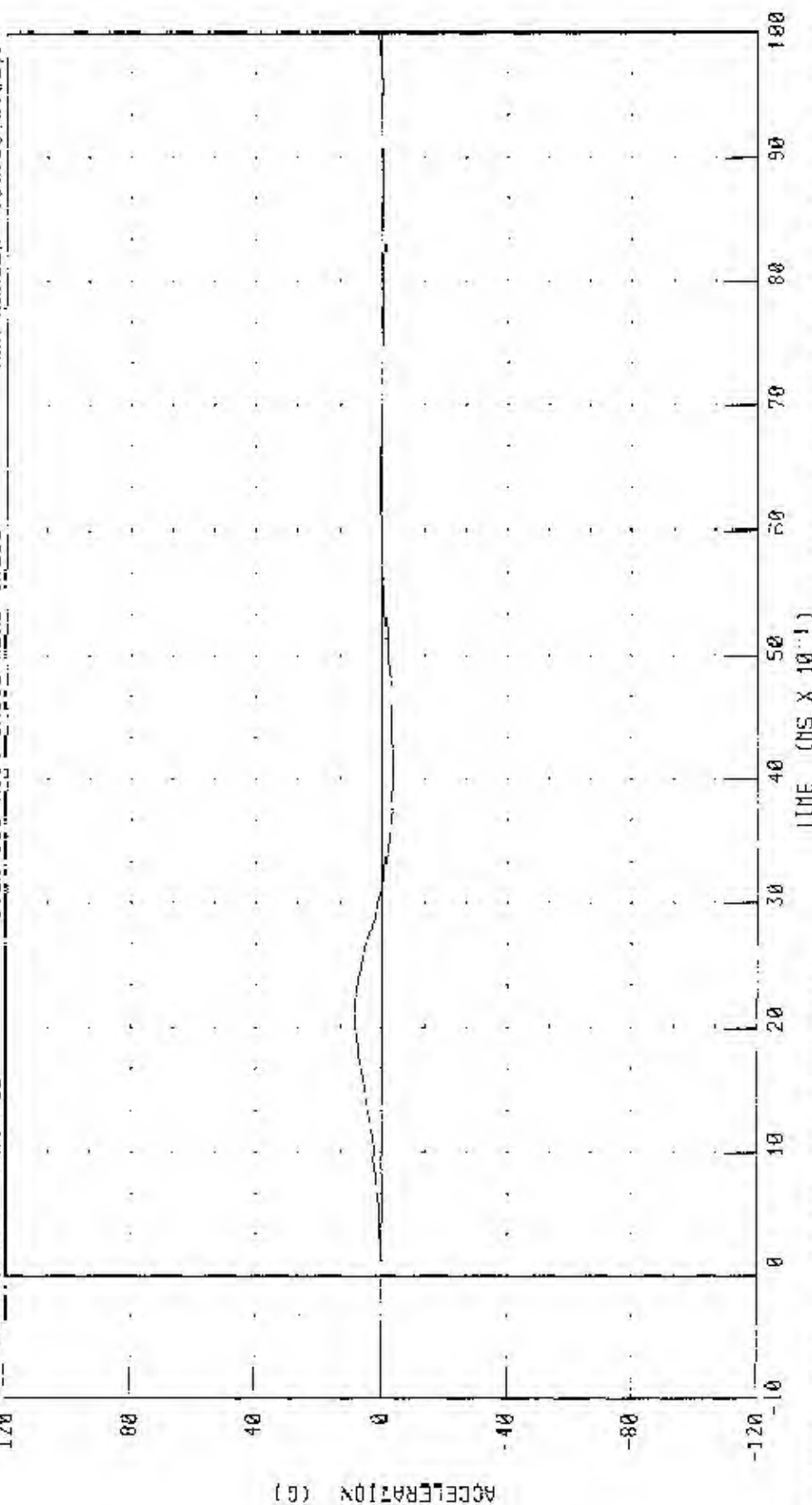
572N SID/HILL DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL90802

572N SID/HILL SN906 HEAD CAL02

RUN NUMBER: 100203.0722,1



CHANNEL: HDXG FILTER: CH, CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 8.74 3 0 2.16 MS, -3.23 0 0 4 00 MS

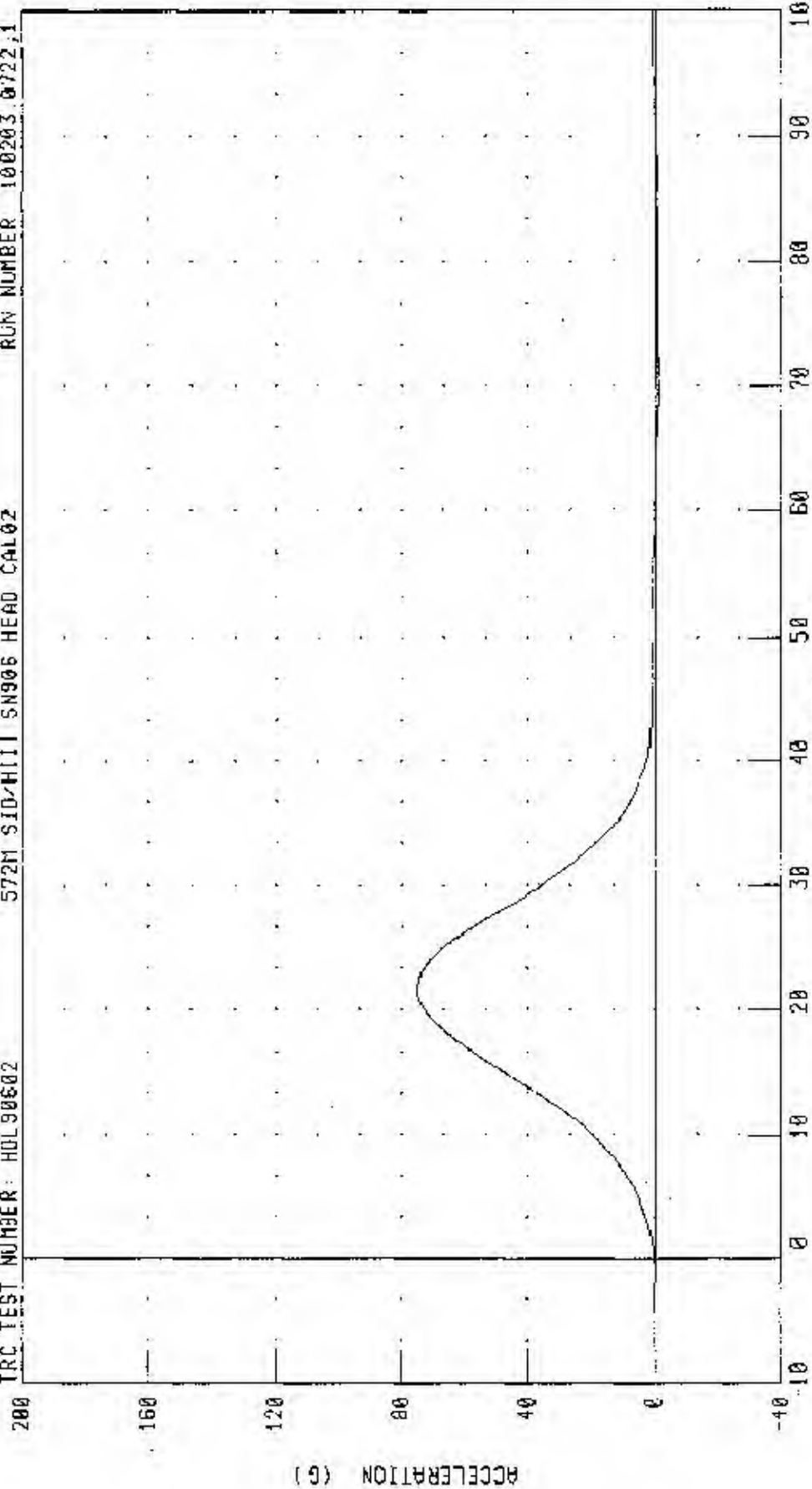
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HOL90602

572M SID/HIII SN906 HEAD CAL02

RUN NUMBER 100203 0722.1



PEAK DATA: 74.94 G 2.16 MS; -0.73 G 7.04 MS

CHANNEL: HEDYG FILTER: CH. CLASS 1000

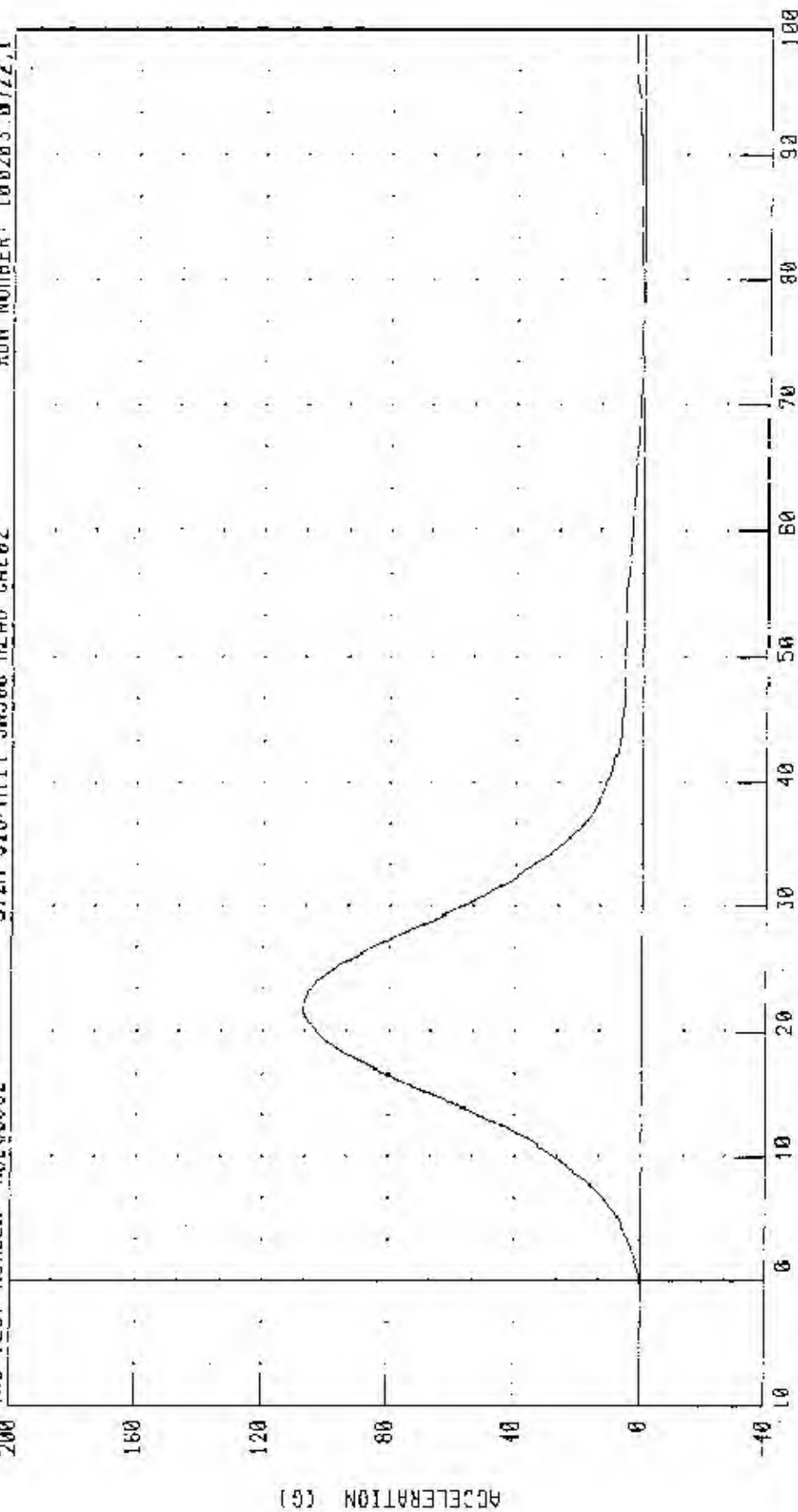
572N S10/H111 DUMHY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: WJL90602

572N S10/H111 SN906 HEAD CAL02

RUN NUMBER: 100203.0722,1



CHANNEL: HEDZG FILTER: CH CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 107.22 G 2.16 MS, -0.08 G 0.96 MS

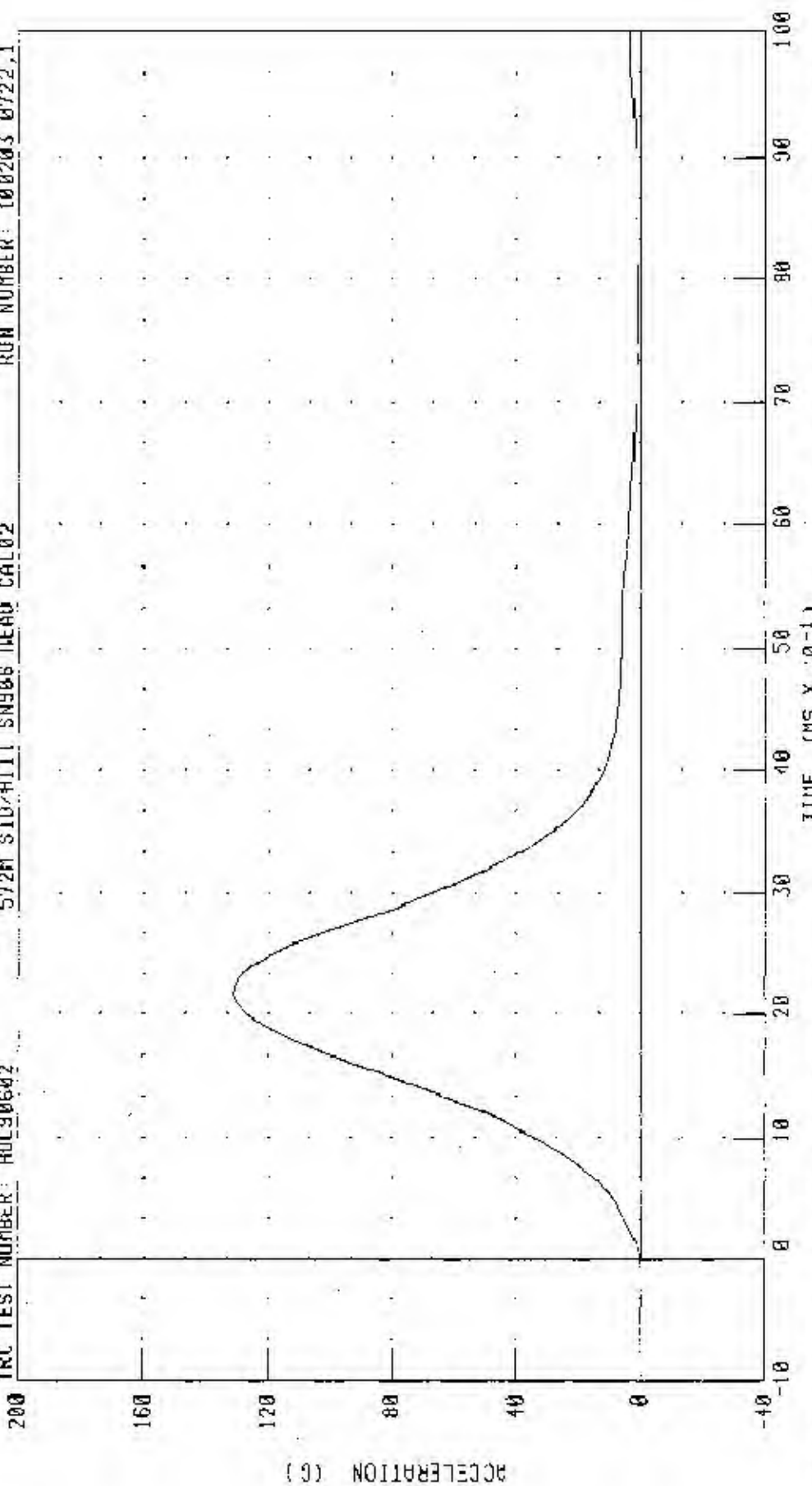
572M SID/HIII DUNNY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

IRC TEST NUMBER: HDL90602

572M SID/HIII SN986 HEAD CAL02

RUN NUMBER: 100203 0722,1



CHANNEL: HEDRC FILTER: CH CLASS 1000

PEAK DATA: 131.10 G @ 2.16 MS, 0.03 G @ -0.72 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRID III SID DUMMY

11-SEP-03

LEFT SIDE CONFIGURATION

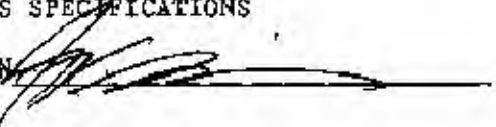
TRC INC.

TEST NO. NFL90602

572M SID/H3 SN906 NECK CAL02

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.11 deg. C
RELATIVE HUMIDITY		10 - 70 %	62.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.46 M/S
	20 MS	4.12 - 5.10 M/S	4.84 M/S
	30 MS	5.73 - 7.01 M/S	6.70 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.12 - 7.23 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	68.66 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	61.12 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	78.20 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	54.56 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	8.80 MS

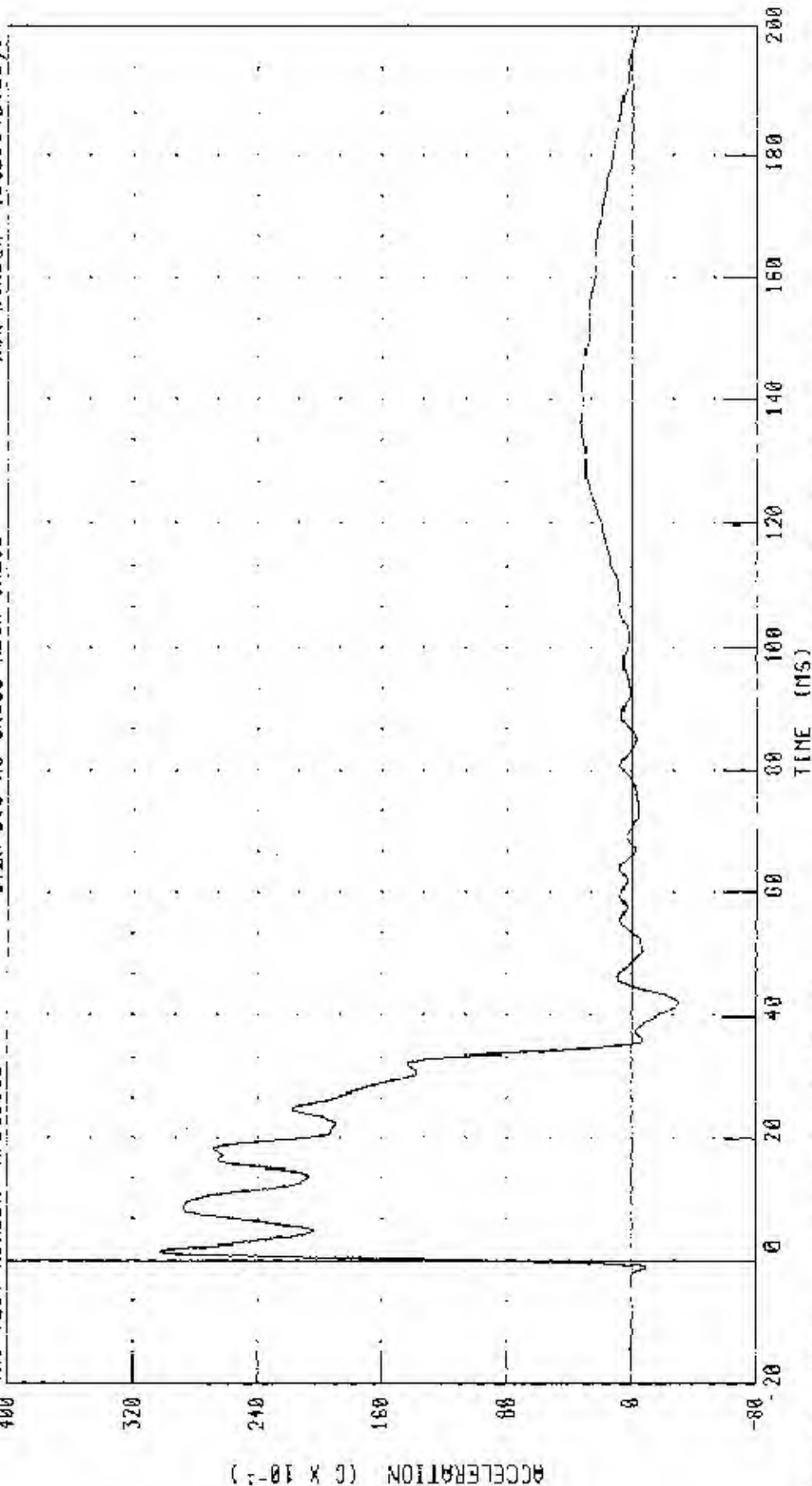
TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 100203.0721;1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
 PENDULUM DECELERATION

TRC TEST NUMBER: NFI90602 572M SID/H3 SN906 NECK CAL02 RUN NUMBER: 100203.0723.1



CHANNEL: PENXC FILTER: CH. CLASS 100

PEAK DATA: 30.26 G 1.52 MS, 2.00 G 0.47.08 MS

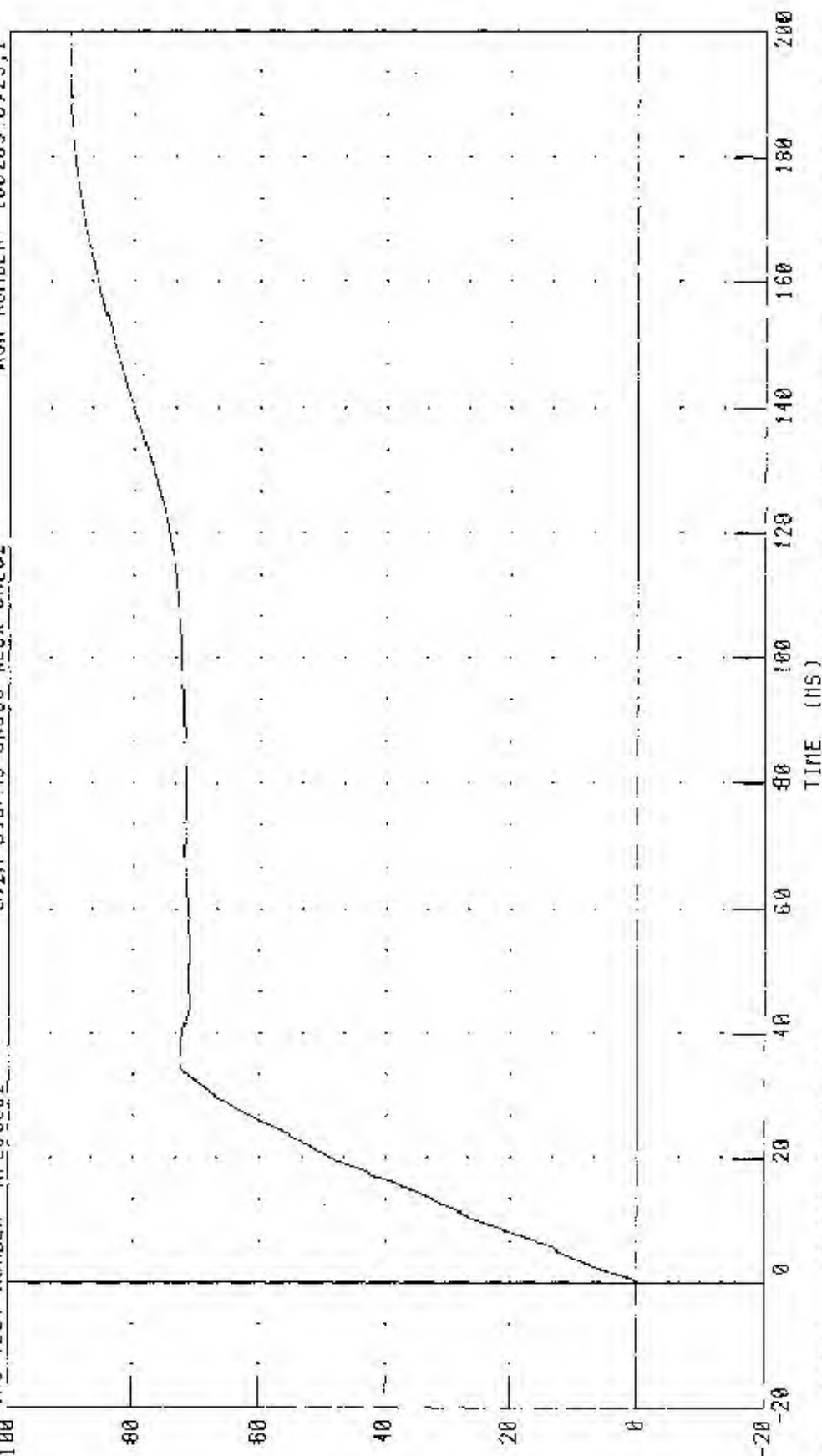
572M H3/S10 DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NTL90602

572M S10/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723;1



PEAK DATA: 9.06 M/S @ 136.56 MS, -0.01 M/S @ -0.64 MS

CHANNEL PEXVI FILTER CH. CLASS 100

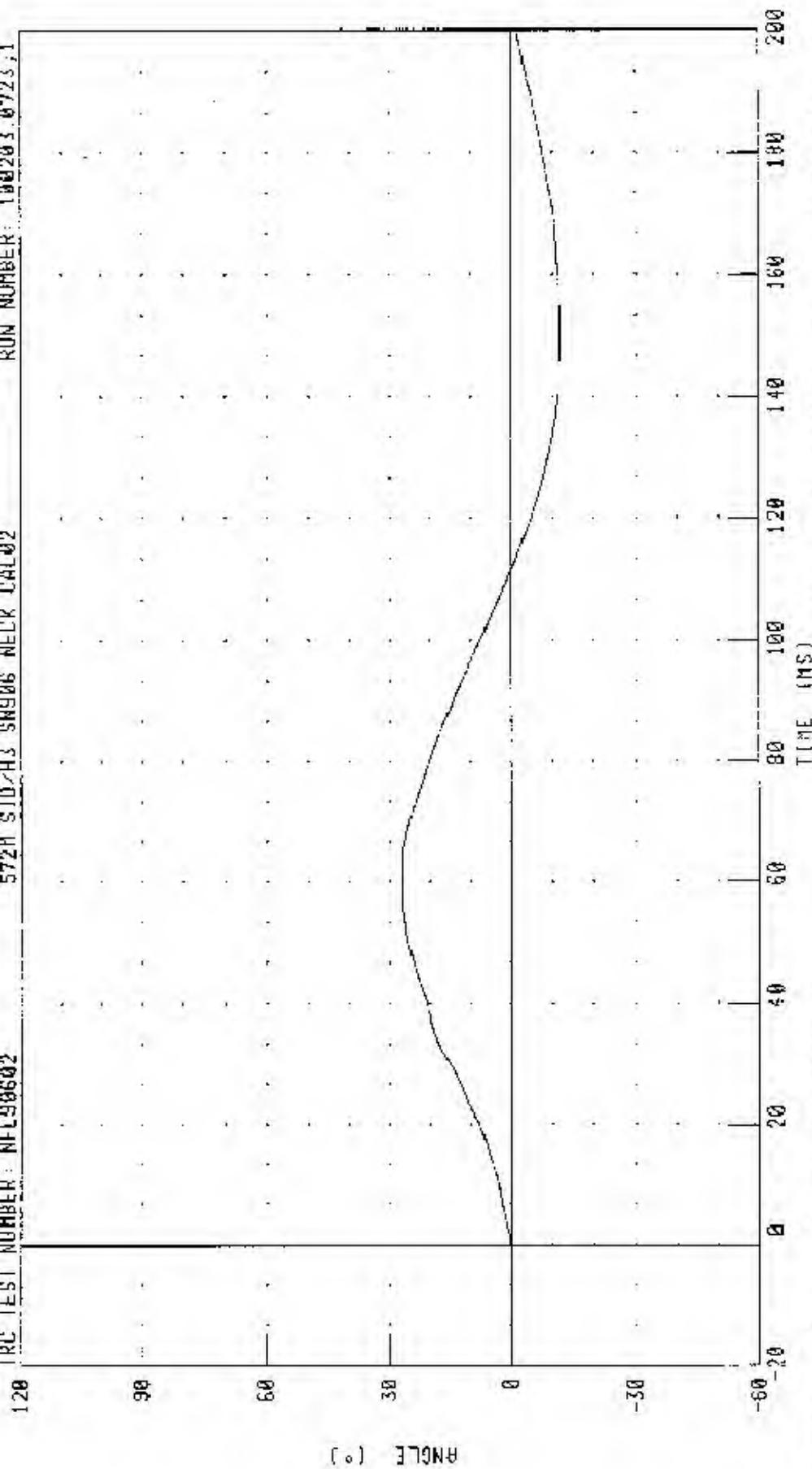
572M J13/S10 DUMMY CALIBRATION LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL90602

572M S10/H3 SNG06 NECK CAL02

RUN NUMBER: 100203 0723,1



PEAK DATA: 26.87 ° @ 61.92 MS, -11.81 ° @ 150.40 MS

CHANNEL BETA FILTER CII CLASS 60

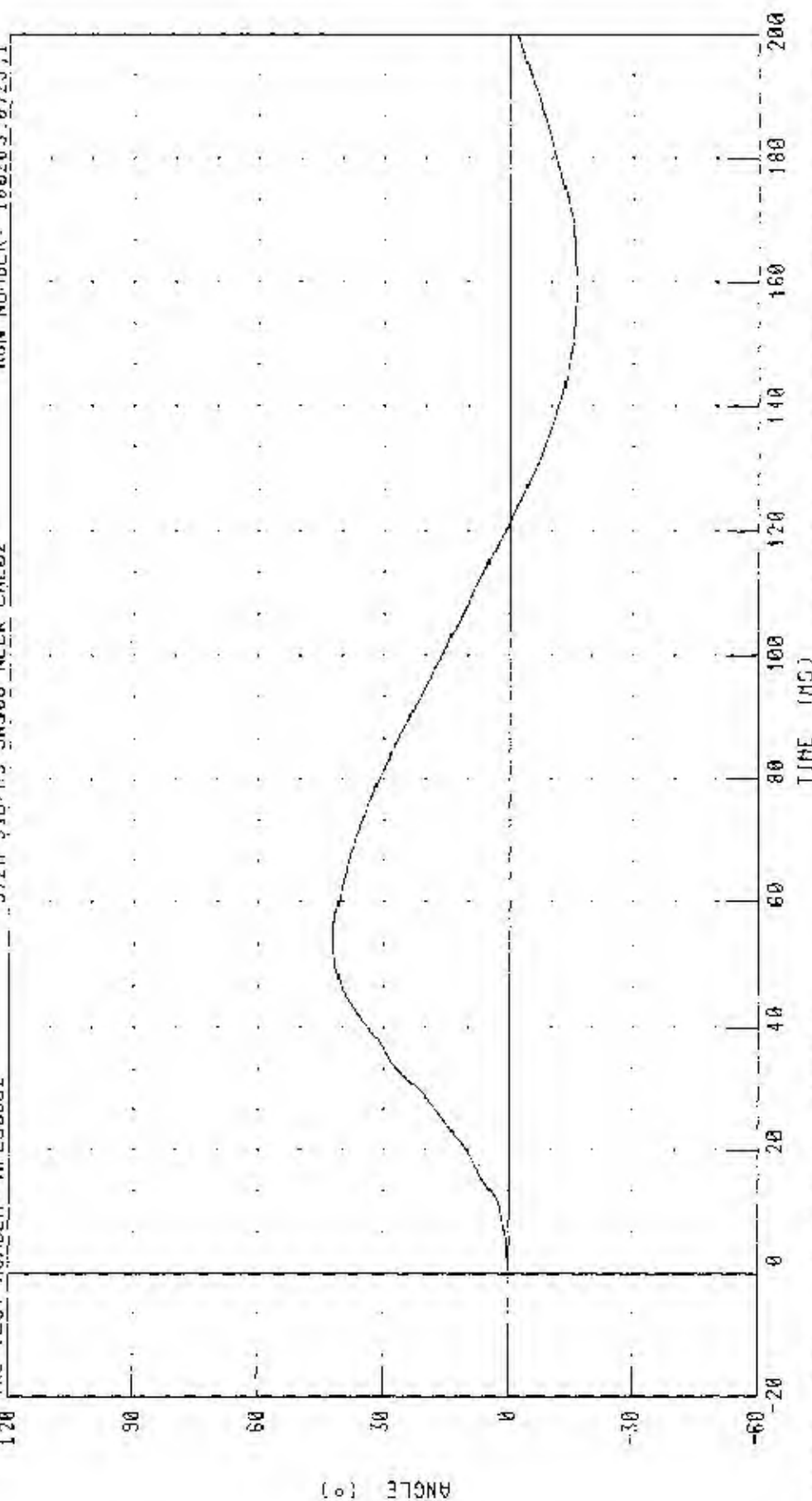
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

ARC TEST NUMBER: WFL90602

572M 310/113 SN906 NECK CAL02

RUN NUMBER: 100203.0723,1



TIME (MS)

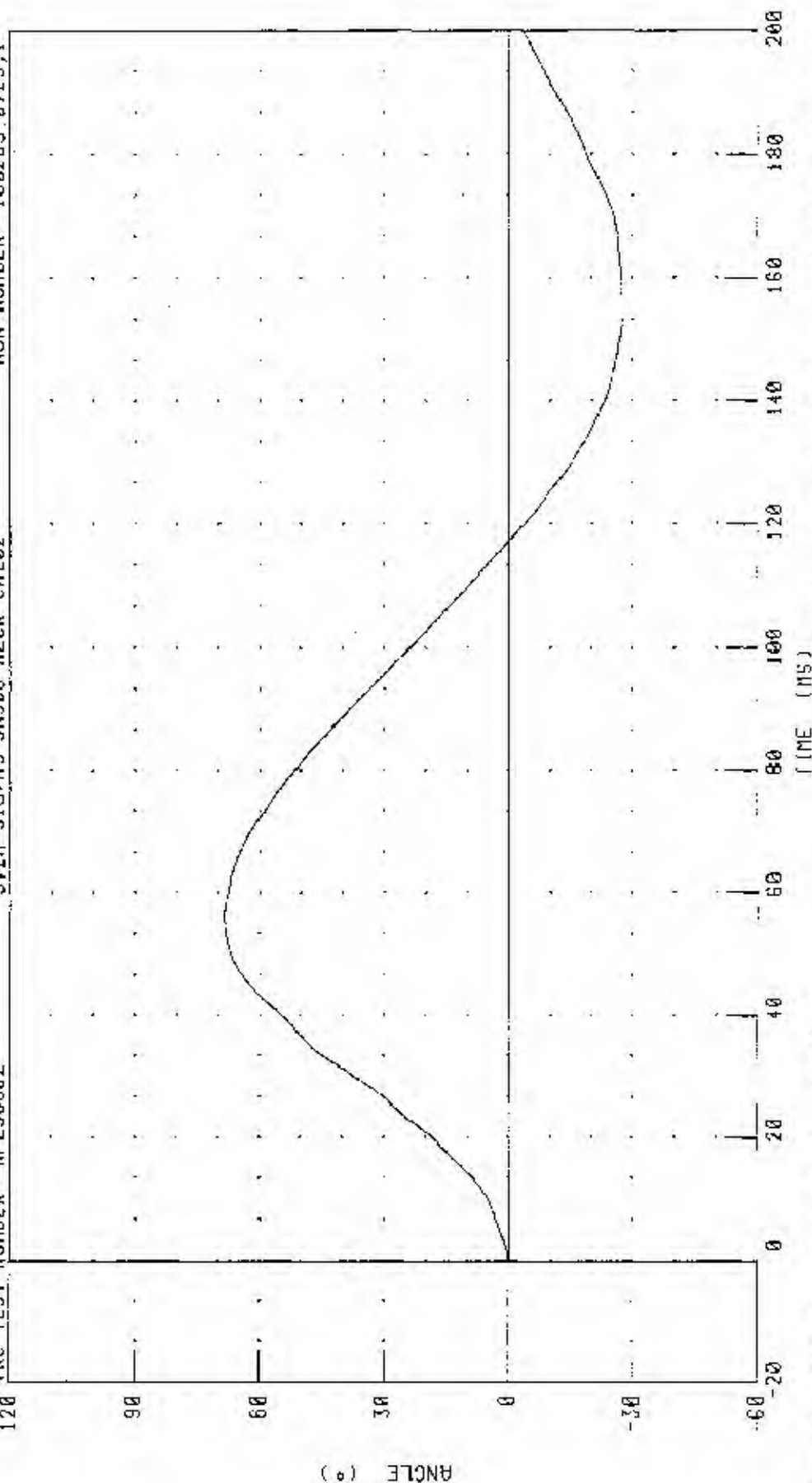
CHANNEL: TIME IN FILTER: CH. CLASS 60

PEAK DATA: 42.4 0 0 54.80 MS, -15.74 0 0 158.80 MS

S72H H3/STD DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NFL90602 572H STD/H3 SN906 NECK CAL02 RUN NUMBER: 100203.0723.1



CHANNEL: TOTAL FILTER: CH. CLASS: 60

PEAK DATA: 68.66 ± 3.56.16 MS; -27.31 ± 0.156.48 MS

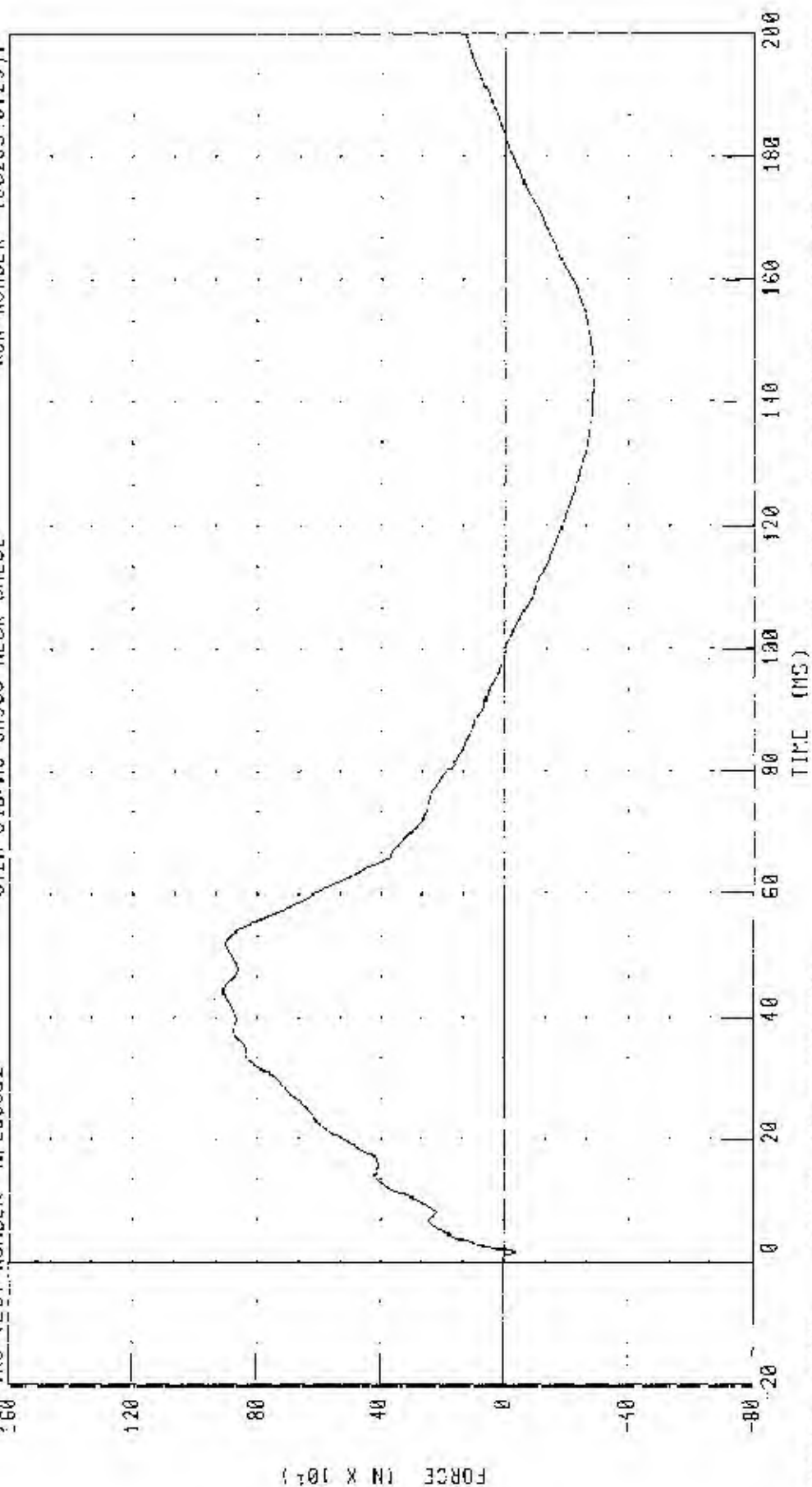
572M H3/S1D DUMMY CALIBRATION LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

IRC TEST NUMBER: NFL90002

572M S1D/H3 SN906 NECK CAL02

RUN NUMBER: 100203.0723.1



CHANNEL: NEKY

FILTER: CH CLASS 1000

TIME (MS)

PEAK DATA: 909.75 N @ 44.40 MS, -294.02 N @ 145.36 MS

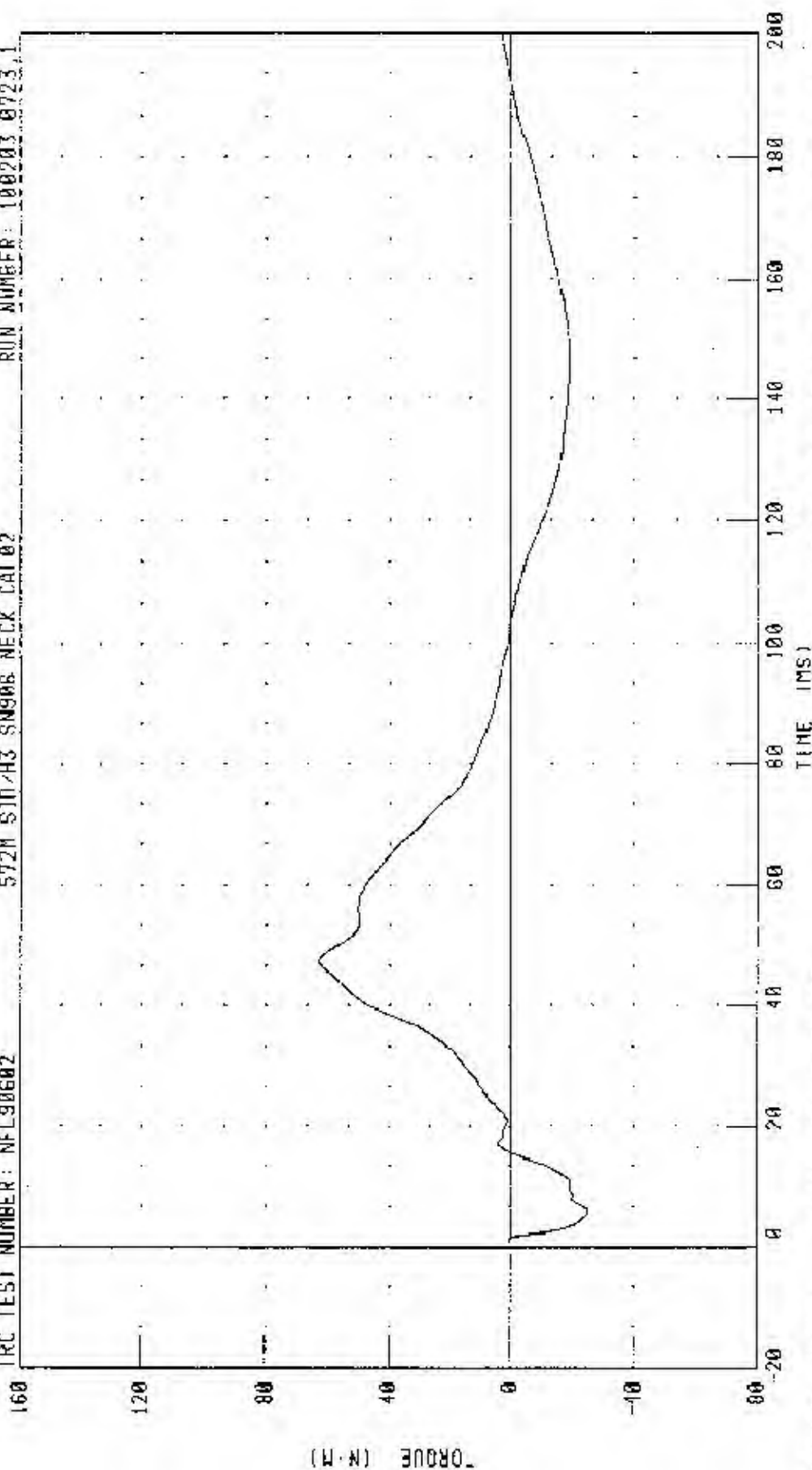
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NFL90602

572M S10/H3 SN908 NECK CAL02

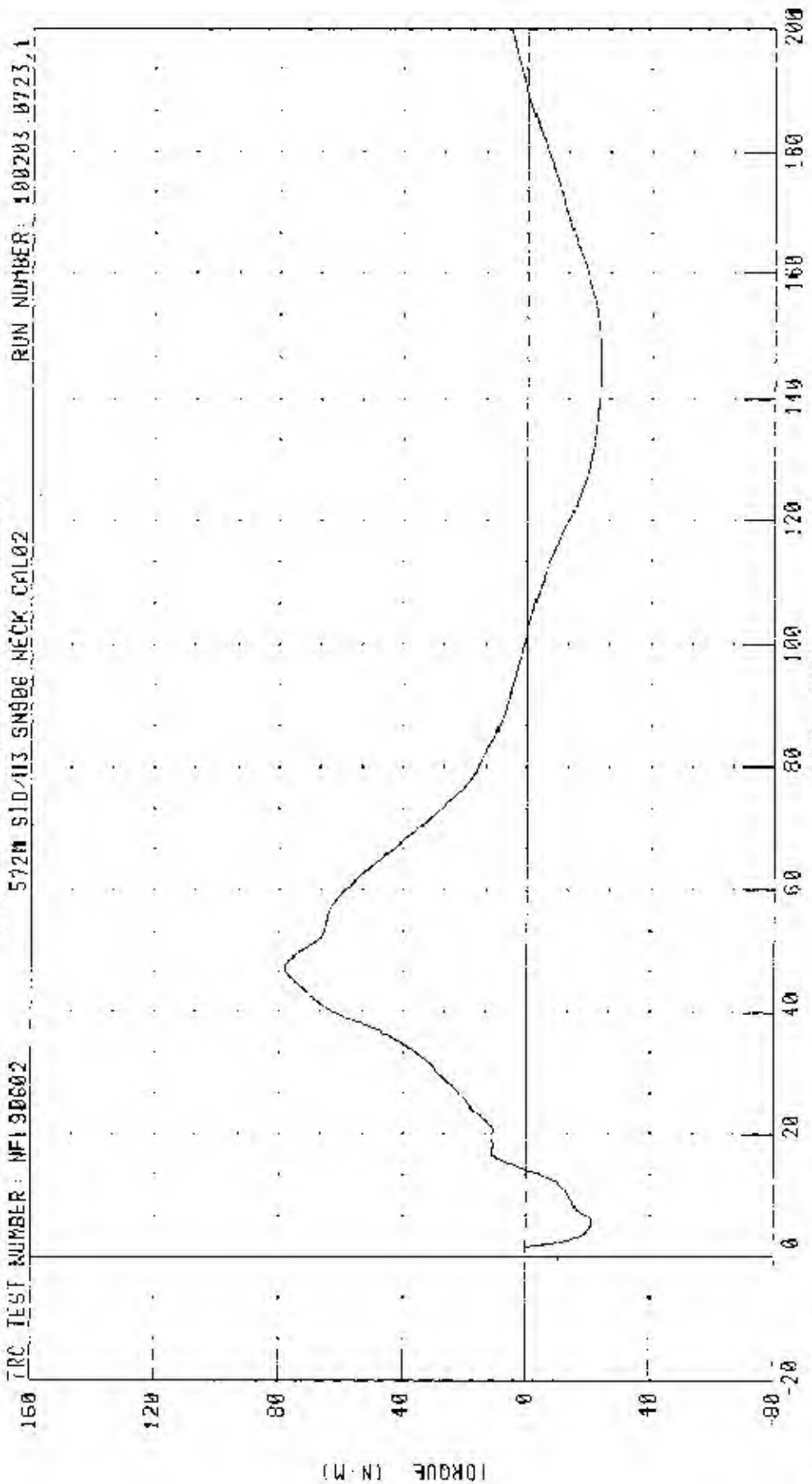
RUN NUMBER: 100203 0723.1



PEAK DATA: 62 80 N.H. 0 47 44 *S, -25 21 N H 0 5.92 MS

CHANNEL: NEKXII FILLEN: CH. CLASS 600

572M H3/S10 DUMMY CALIBRATION LEFT LATERAL NECK FESI
 TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



CHANNEL NECKM FILTER: ALL CLASS 800
 PEAK DATA: 78.20 M H 0 17.36 MS, 23.87 M H 0 145 04 MS

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

12-SEP-03

TRC INC.

572F SN906 DAMPER TEST CAL02

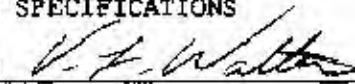
TEST NUMBER: DP90602A, DP90602B, DP90602C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	63.0 %
VELOCITY 2.75 M/S	FORCE	667 - 925 N	806 N
	DISPLACEMENT	29.7 - 34.5 MM	29.9 MM
VELOCITY 4.24 M/S	FORCE	1706 - 2072 N	1929 N
	DISPLACEMENT	31.6 - 37.2 MM	34.1 MM
VELOCITY 6.17 M/S	FORCE	3824 - 4542 N	4480 N
	DISPLACEMENT	33.3 - 39.6 MM	36.3 MM

DAMPER SETTING = 6.0

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 100203.0724;1

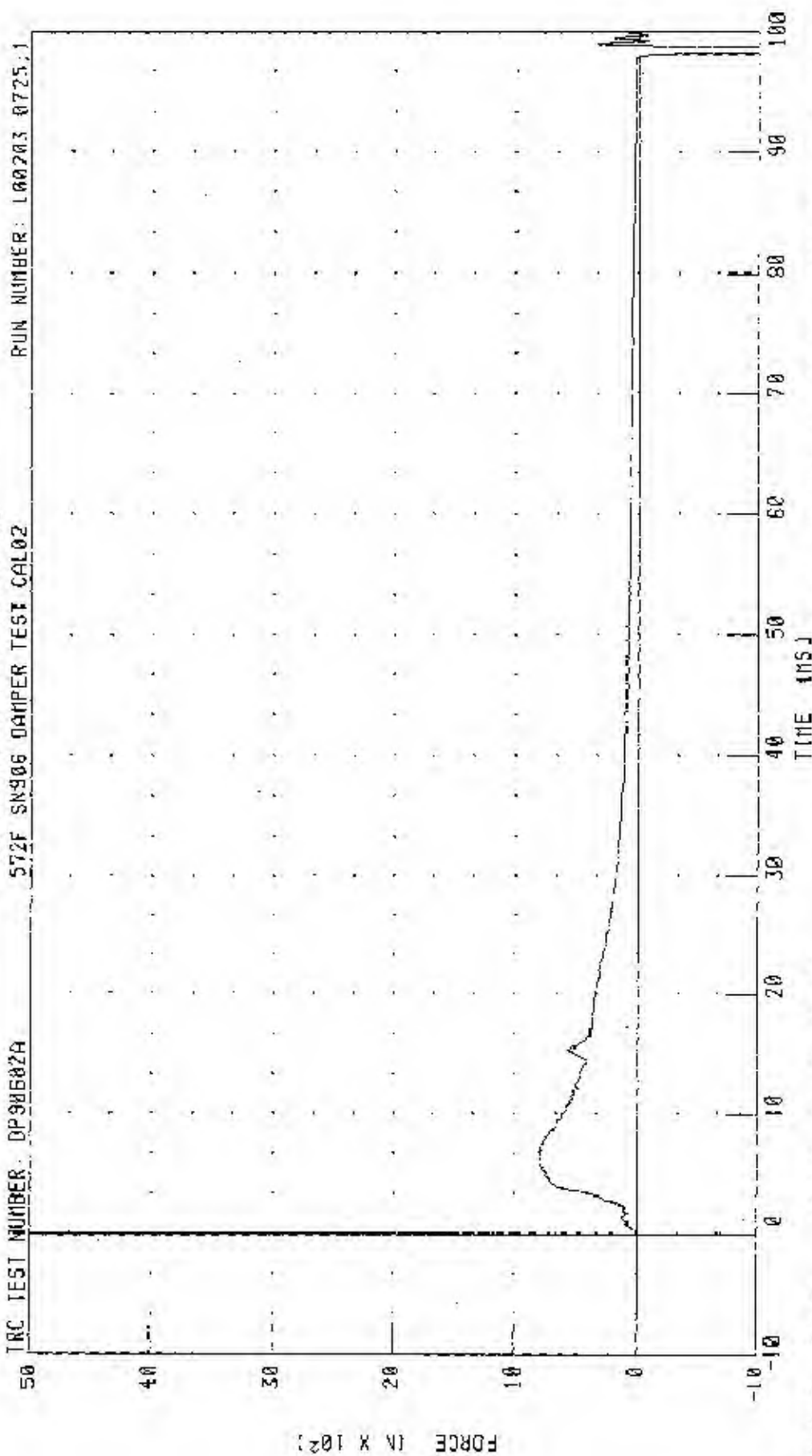
PART 572-F 51.0 THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

572F SN906 DAMPER TEST CAL02

TRC TEST NUMBER: DP90502A

RUN NUMBER: 100203 0725.1



CHANNEL: DAMPF FILTER: CH. CLASS 1000

PEAK DATA: 805.75 N @ 6.80 MS, -2274.95 N @ 98.40 MS

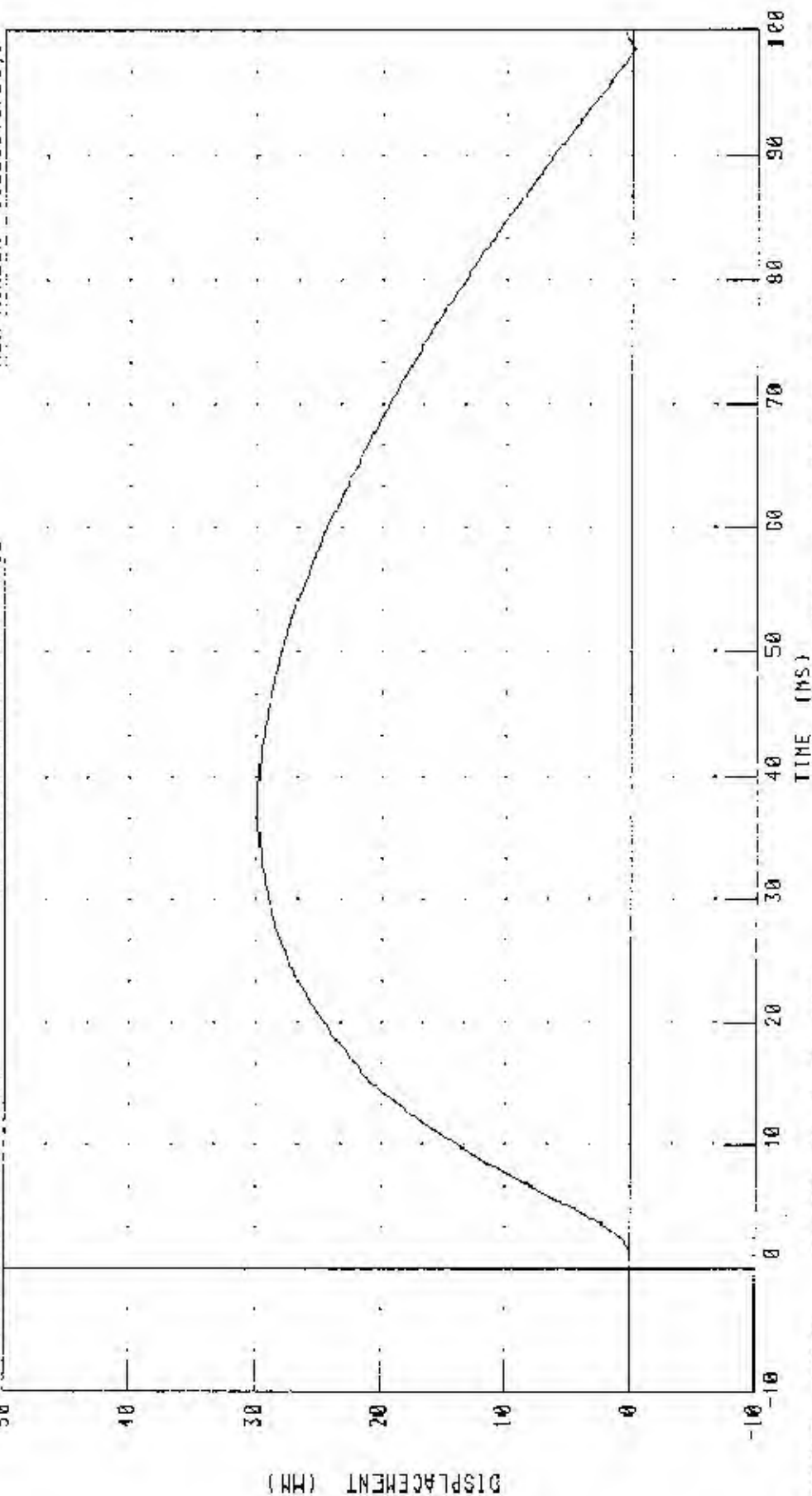
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (30 N/SEC.)

SHOCK ABSORBER DISPLACEMENT

572F SN906 DAMPER TEST CAL02

TRC TEST NUMBER: OP90602A

RUN NUMBER: 100203.0725.1



CHANNEL: CSTYD FILTER: CIL CLASS 1000

PEAK DATA: 29.35 MM @ 36.40 MS; -0.23 MM @ 98.54 MS

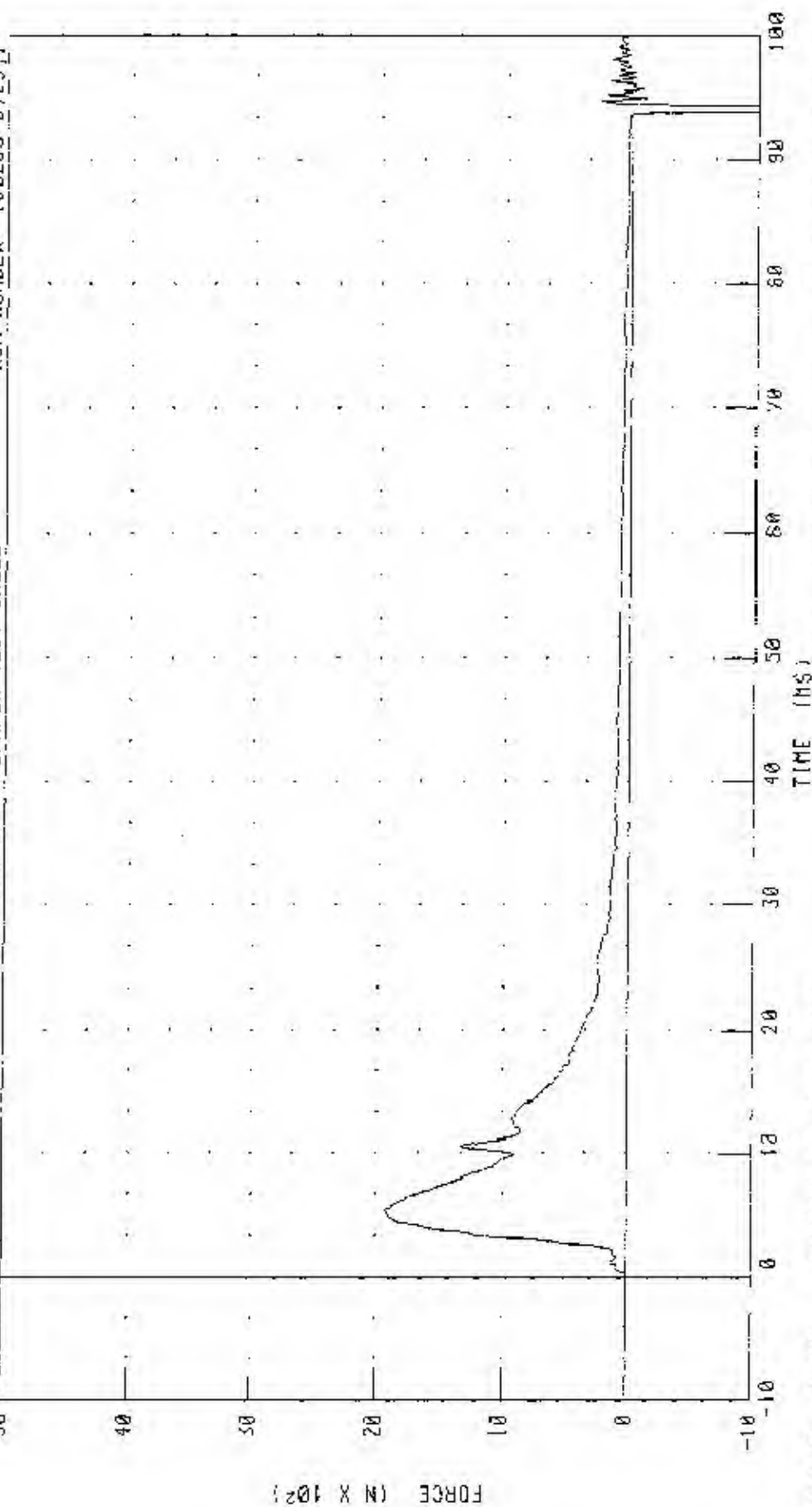
PART 572-F S.I.B. HYDRAIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP90602B

572F SN906 DAMPER TEST CAL02

RUN NUMBER: 100203 0725 J



CHANNEL: DAPF FILTER: CH. CLASS 1000

PEAK DATA 1928.88 N @ 5.28 MS, 2557.41 N @ 94.00 MS

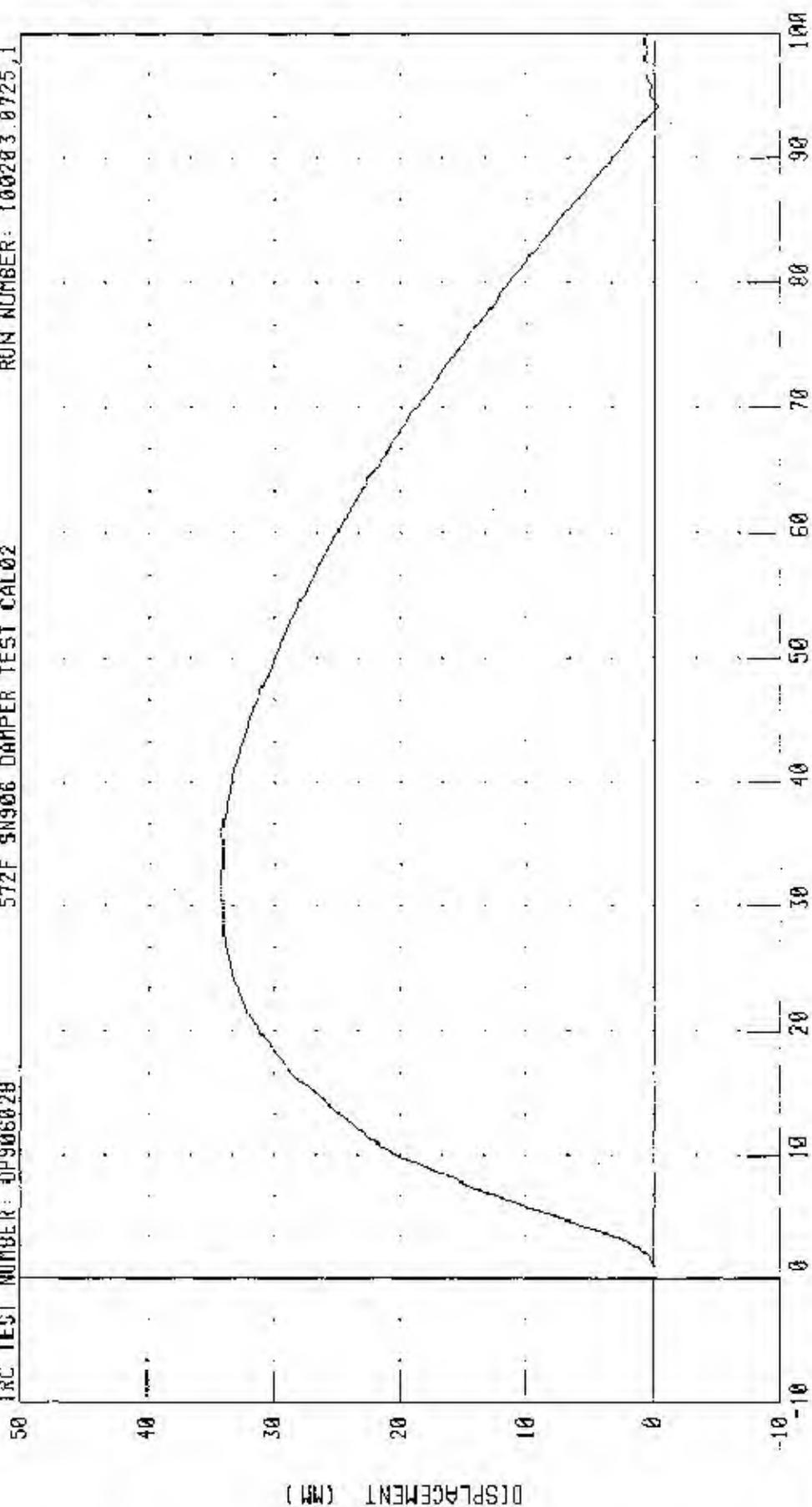
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC J

SHOCK ABSORBER DISPLACEMENT

IRC TEST NUMBER: 0P906020

572F SN906 DAMPER TEST CAL02

RUN NUMBER: 100203.0725,1



TIME (MS)

PEAK DATA 34.14 MM @ 31.60 MS, -0.25 MM @ 94.16 MS

CHANNEL: CSTYD FILTER: CH 4 CLASS 1000

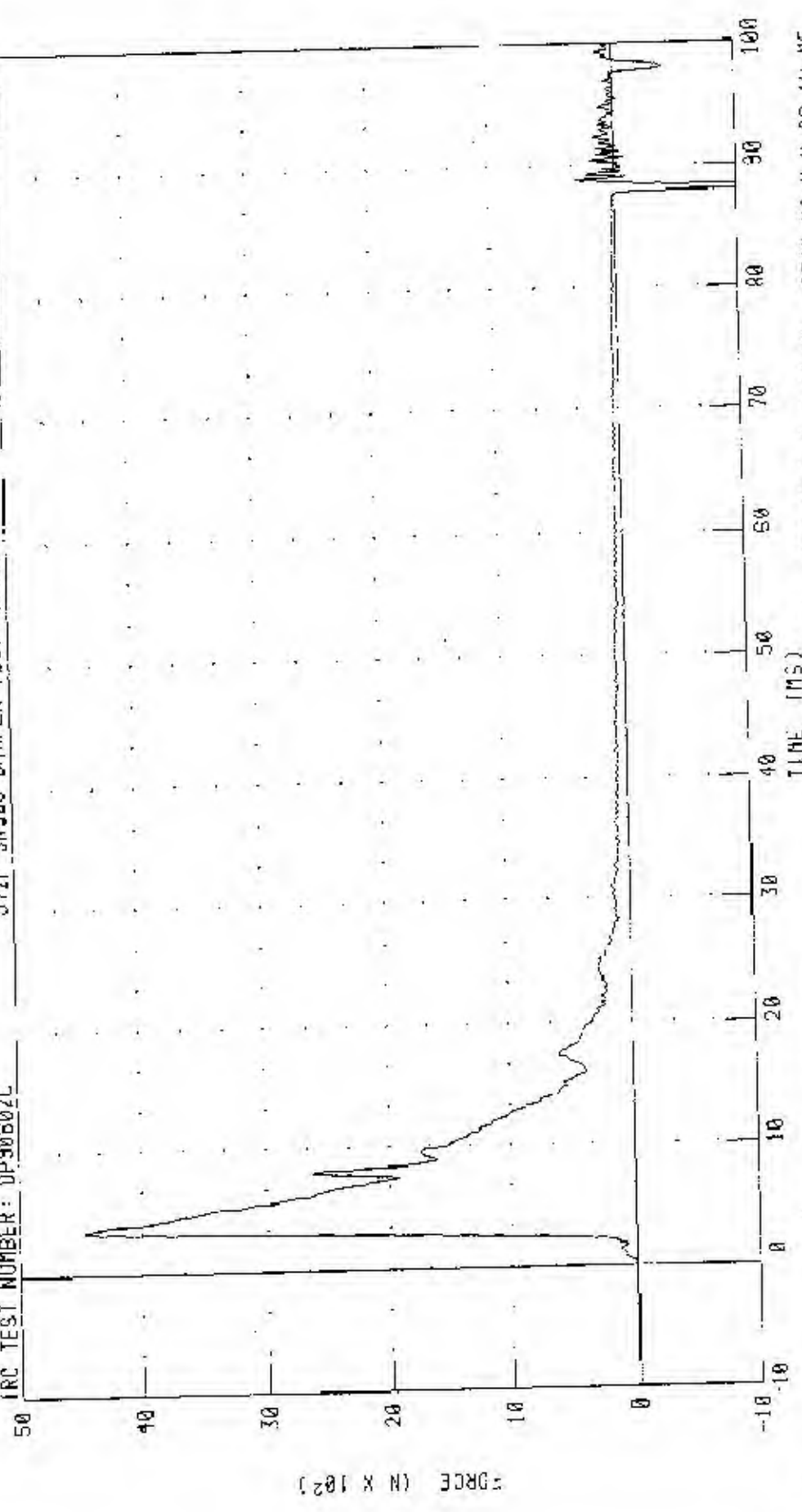
PART 572-F S 1.0 THORACIC SHOCK ABSORBER CALIBRATION 16.1 N/SEC

SHOCK ABSORBER RESISTIVE FORCE

572F SN926 DAMPER TEST CAL02

RUN NUMBER 100203 0725.1

IRC TEST NUMBER: DP90602C



FORCE (N X 10²)

TIME (MS)

PEAK UNTA 4479.35 N @ 3.44 MS, -2512.86 N @ 88.16 MS

CHANNEL DAMPF FILTER CH CLASS 1000

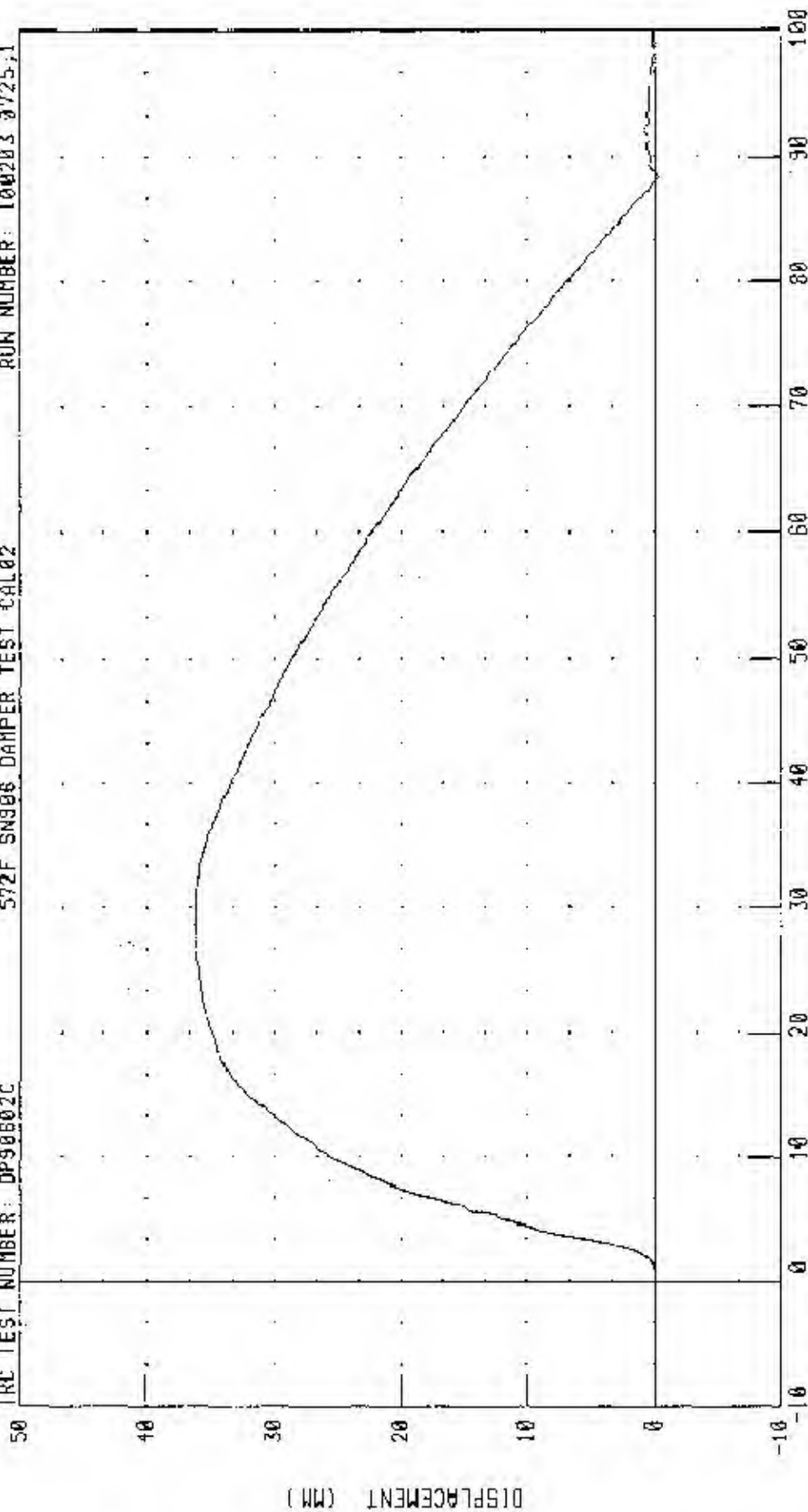
PAR1 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC.)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP90602C

572F SN906 DAMPER TEST CAL02

RUN NUMBER: 100203 0725.1



TIME (MS)

CHANNEL: CSTVD FILTER: CH. CLASS 1000

PEAK DATA: 36.26 MM @ 28.00 MS; -0.24 MM @ 88.32 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL90602

SID/HIII SN906 L.THORAX CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	54.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.26 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	37.5 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	37.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	16.1 G

TEST MEETS SPECIFICATIONS

TECHNICIAN V.J. Walter

RUN NUMBER: 100203.0724;1

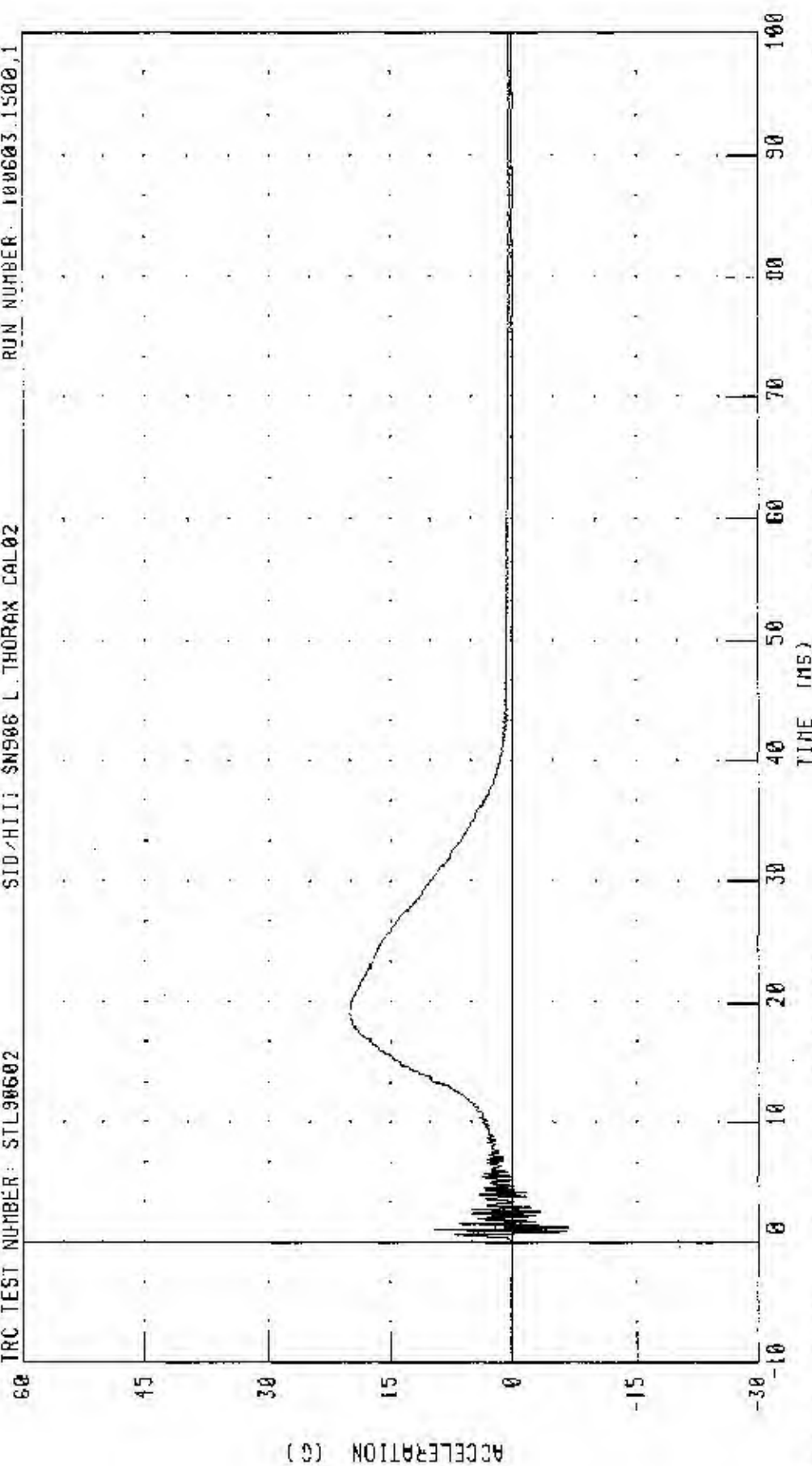
PART 572 F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL90602

SID/HII: SN906 L THORAX CAL02

RUN NUMBER: 100603.1500,1



CHANNEL: PENXG FILTER: CH. CLASS 1800

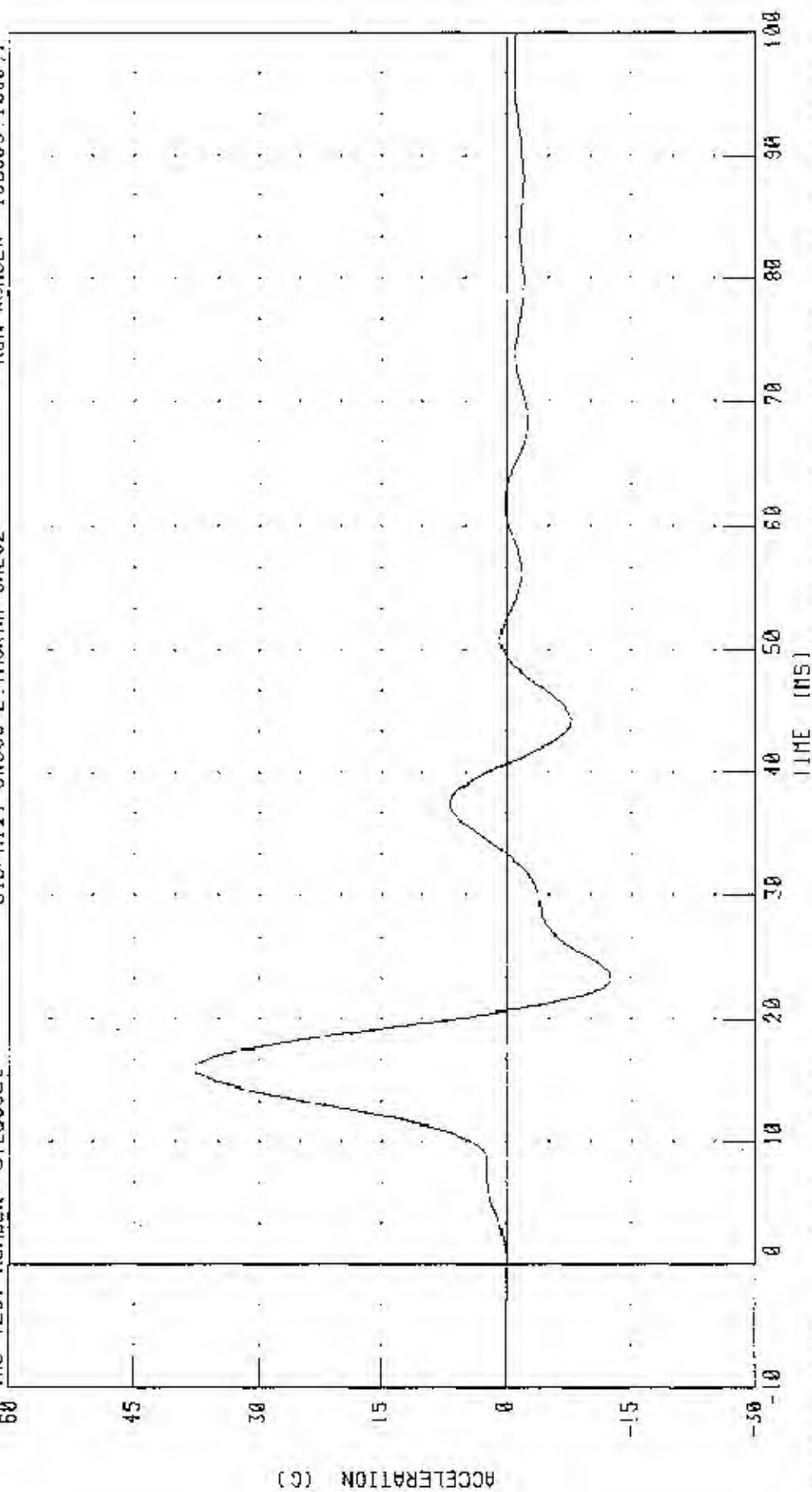
PEAK DATA: 20.06 G @ 19.20 MS; -6.68 G @ 1.28 MS

PART 572-F 5.1.D THORAX CALIBRATION -- (LEFT SIDE IMPACT)
 LEFT UPPER RIB ACCELERATION Y AXIS

IRC TEST NUMBER: STL90602

SID/HIT SN906 L THORAX CAL02

RUN NUMBER: 100003.1500.1



CHANNEL: LURYG

FILTER: FIR 100

TIME (MS)

PEAK DATA 37.51 G @ 10.25 MS, -12.60 G @ 23.13 MS

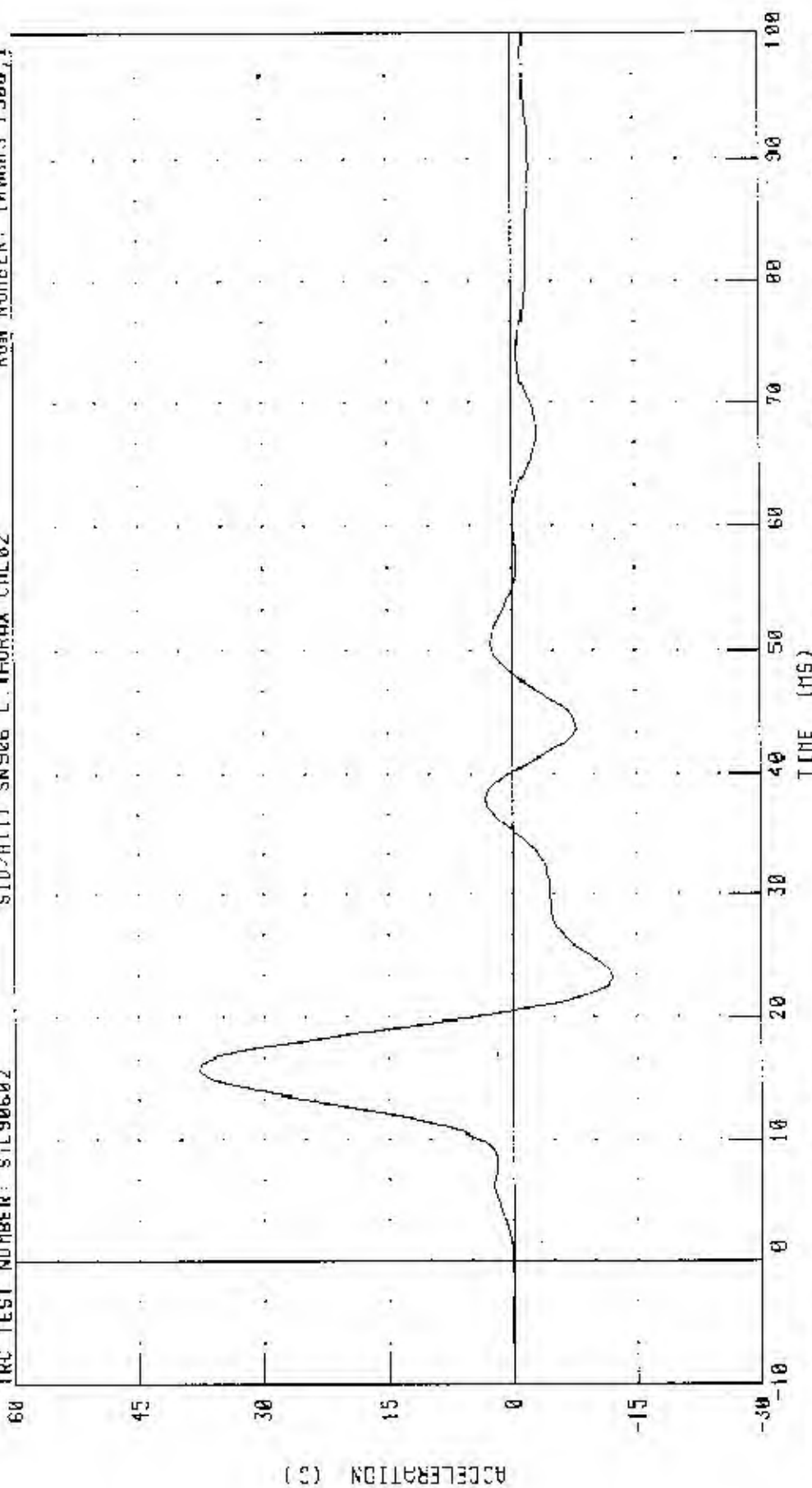
PART 572 F S.I.O. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL90602

SID-H111 SN506 L THORAX CAL02

RUN NUMBER: 110603 1500.1



CHANNEL: LLRYC FILTER: FIR 100

PEAK DATA: 37.76 G @ 15.63 MS, -12.18 G @ 23.13 MS

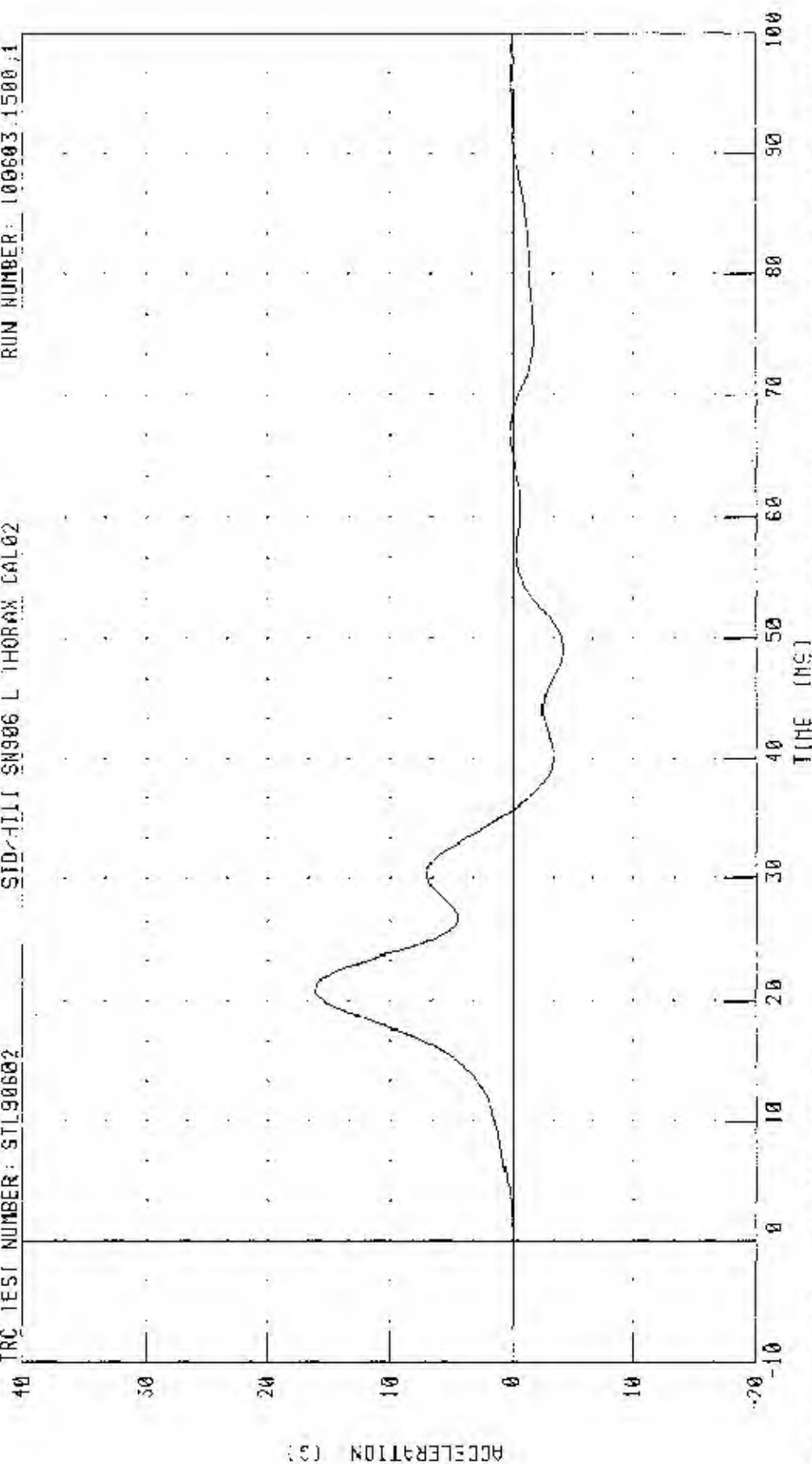
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: ST190602

SID-HILL SN906 L THORAX CAL02

RUN NUMBER: 100603.1500.1



CHANNEL: T12YC FILTER: FIR 100

PEAK DATA 16.10 0 0 21.25 MS; -4.20 0 0 49.37 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL90602

SID/HIII SN906 L.PELVIS CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	52.6 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

V.J. Walter

RUN NUMBER: 100203.0723;1

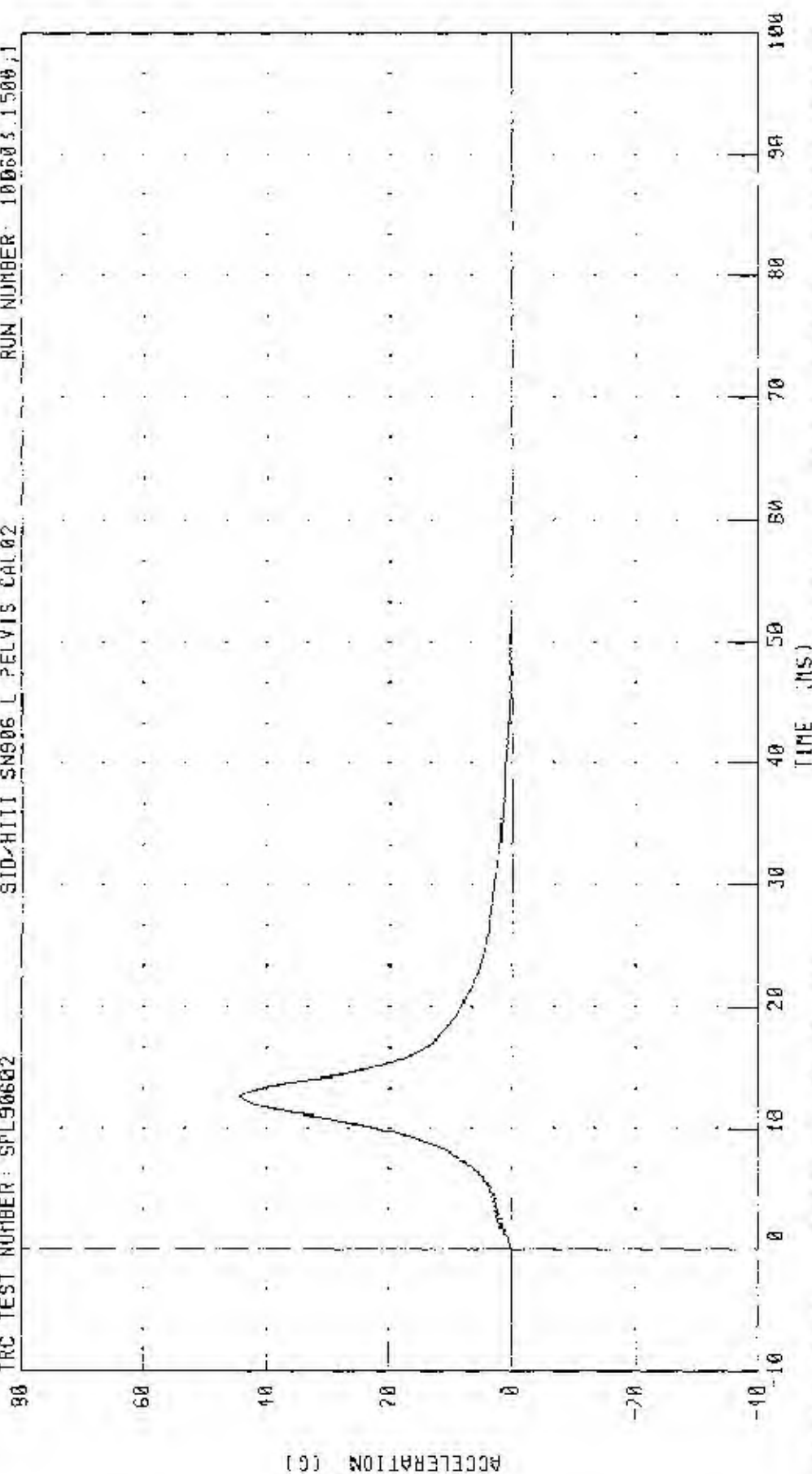
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENULUM DECELERATION

TRC TEST NUMBER: SPL90602

SID/HILL SN906 L PELVIS CAL 02

RUN NUMBER: 100604.1500.1



CHANNEL: PENXG FILTER: CH CLASS 1000

PEAK DATA: 44.53 G @ 12.56 MS; -0.08 G @ 53.92 MS

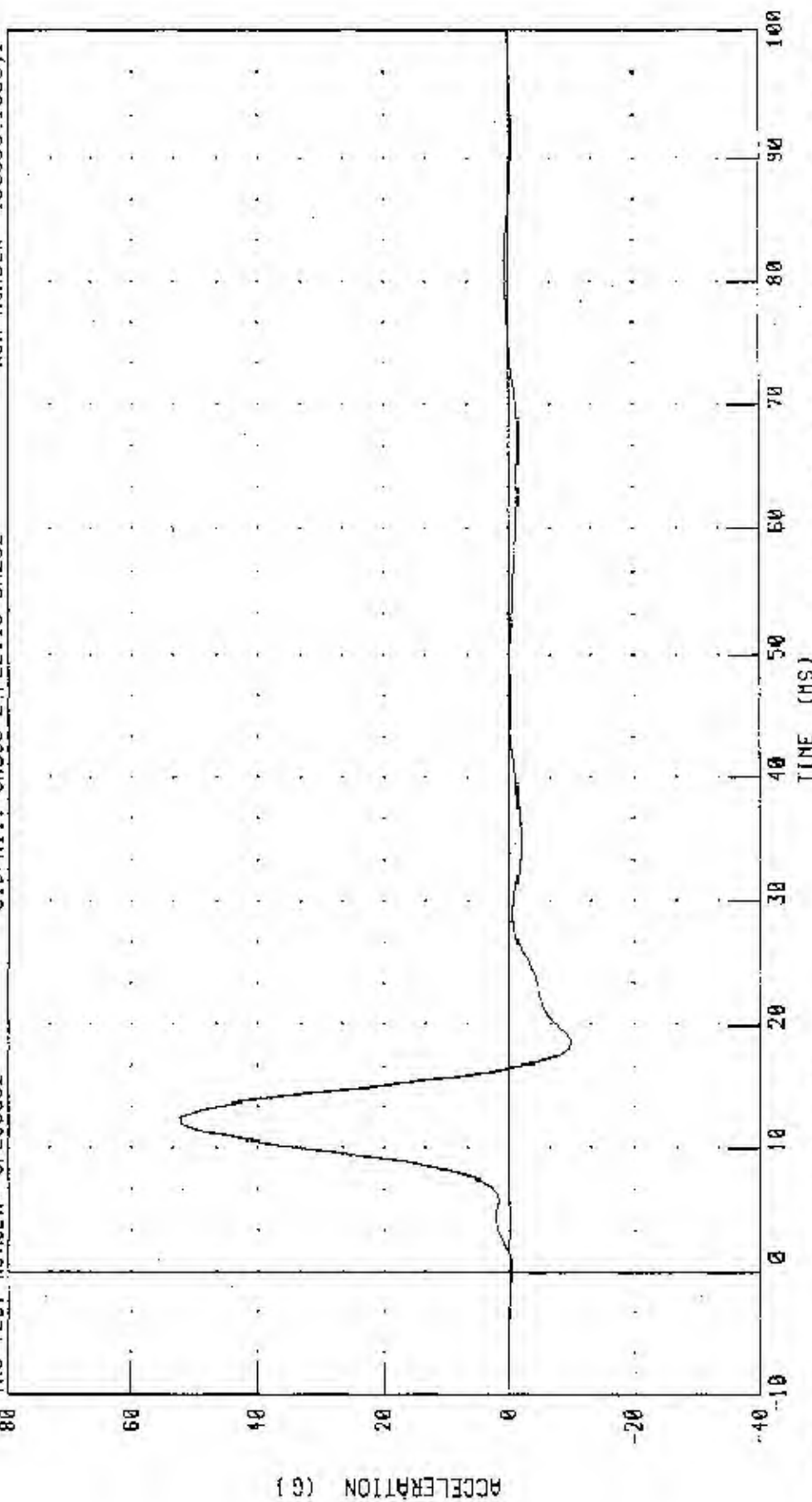
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL90602

SID/HII SN906 L PELVIS CAL02

RUN NUMBER: 100603.1500.1



CHANNEL: PEVYG FILTER: FIR 100

PEAK DATA: 52.58 G @ 12.50 MS, -9.84 G @ 10.75 MS

Calibration Test Results

Post-Test

SID HIT: 055

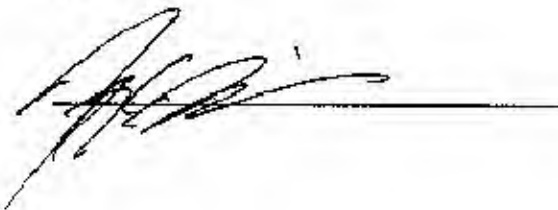
External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

Transportation Research Center Inc.
SID/HII Dummy
External Dimensions
Serial No. 055 Calibration No. 09

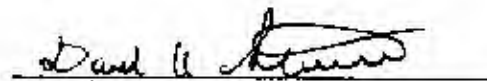
Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	909 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	511 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	223 mm	No *
Knee Pivot From Backline	KH	510.5 - 525.8 mm	525 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	492 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	366 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	171 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	172 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	1.0 mm	Yes

* Test Does Not Meet Specifications

Technician



Approved



TRE

Transportation Research Center Inc.

572M Left Left Lateral Head Test

SLD HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Peak Resultant Acceleration	115 - 150 g	132.3 g	Yes
Peak Longitudinal Acceleration	15 g Max	7.8 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved



10.07.2003 07:05:10 609



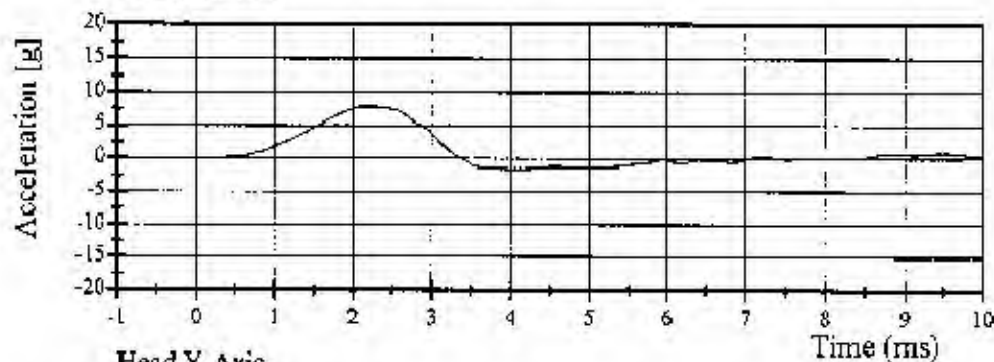
Transportation Research Center Inc.

572M Left Left Lateral Head Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

Head X-Axis

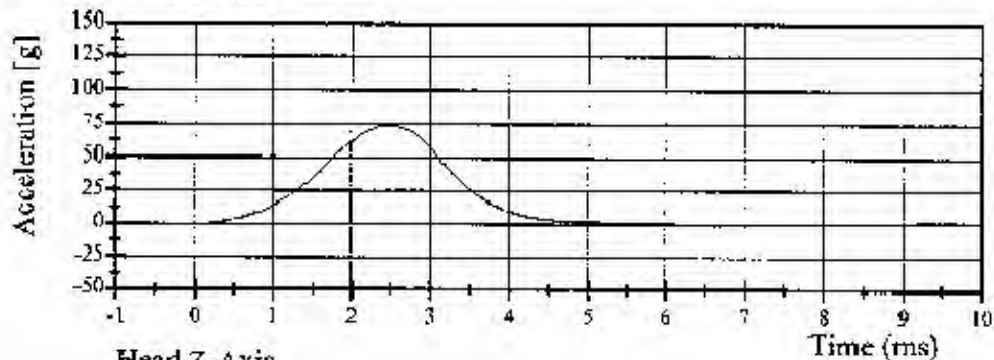


Filter Class: 1000

Max: 7.8 g at 2.2 ms

Min: -1.5 g at 4.1 ms

Head Y-Axis

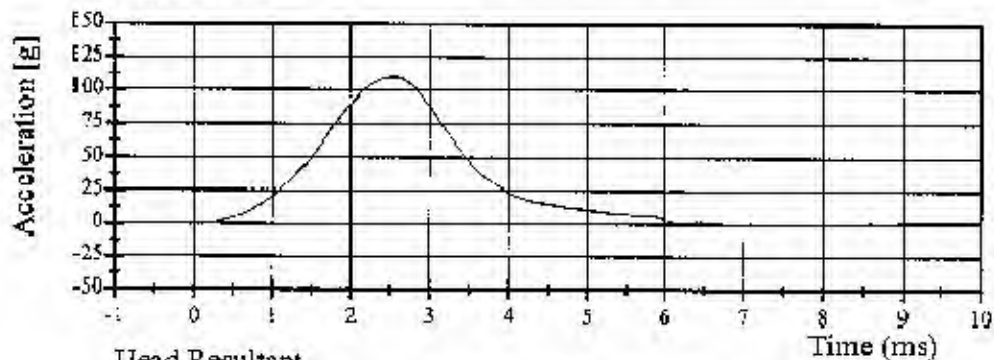


Filter Class: 1000

Max: 74.0 g at 2.5 ms

Min: -1.2 g at 6.6 ms

Head Z-Axis

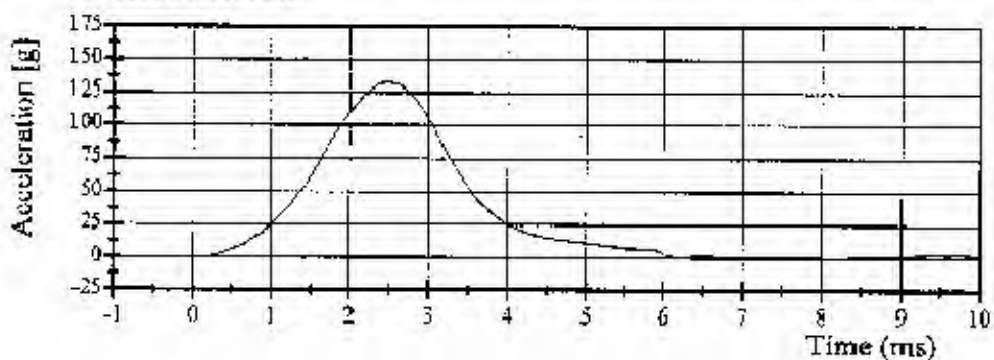


Filter Class: 1000

Max: 109.6 g at 2.6 ms

Min: -0.5 g at 7.6 ms

Head Resultant



Filter Class: 1000

Max: 132.3 g at 2.5 ms

Min: 0.0 g at 2.9 ms

10.07.2003 07:05:11 609



Transportation Research Center Inc.

572M Left Lateral Neck Test

STD HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

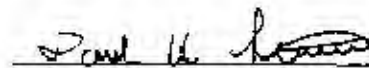
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.06 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.96 - 2.55 m/s	2.32 m/s	Yes
20 ms	4.12 - 5.10 m/s	4.66 m/s	Yes
30 ms	5.73 - 7.64 m/s	6.65 m/s	Yes
40 - 70 ms	6.27 - 7.64 m/s	7.19 - 7.33 m/s	Yes
Peak D Plane Rotation	66 - 82 °	70.6 °	Yes
Rotation Decay Time To 0° From Peak Angle	58 - 67 °	59.8 °	Yes
Peak Moment About Occipital Condyles	73.0 - 88.0 N·m	83.43 N·m	Yes
Moment Decay Time To 0 N·m From Peak Moment	49 - 64 ms	54.56 ms	Yes
Time Between Peak Rotation and Peak Moment	2 - 16 ms	11.04 ms	Yes

Comments:

Technician



Approved



10.07.2003 07:28:54 50G



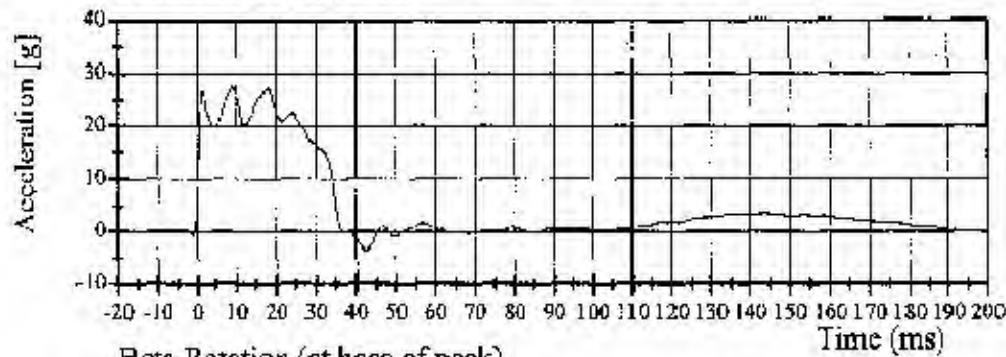
Transportation Research Center Inc.

572M Left Lateral Neck Test

SID HILL Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

Pendulum Deceleration

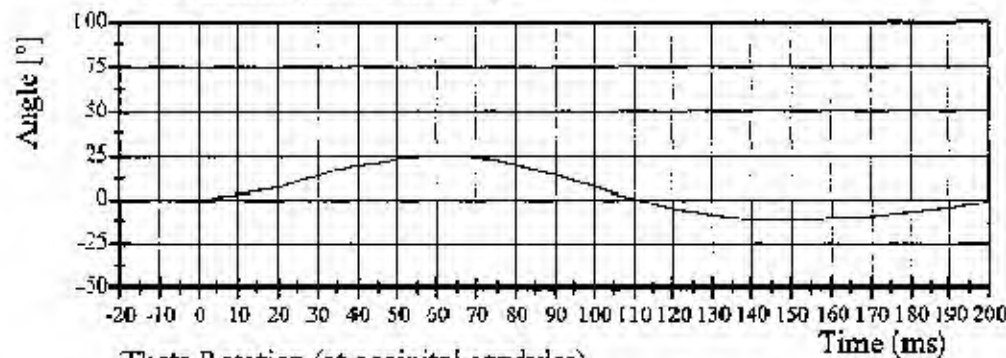


Filter Class: 180

Max: 27.5 g at 9.0 ms

Min: -3.6 g at 42.5 ms

Beta Rotation (at base of neck)

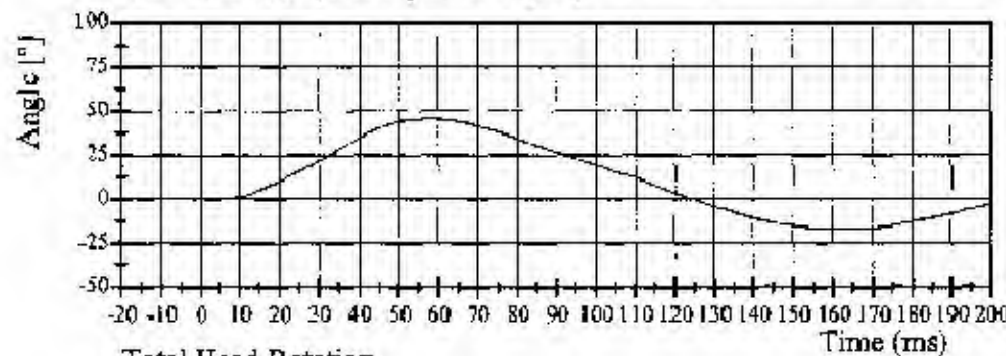


Filter Class: 60

Max: 25.5 ° at 61.8 ms

Min: -12.3 ° at 147.6 ms

Theta Rotation (at occipital condyles)

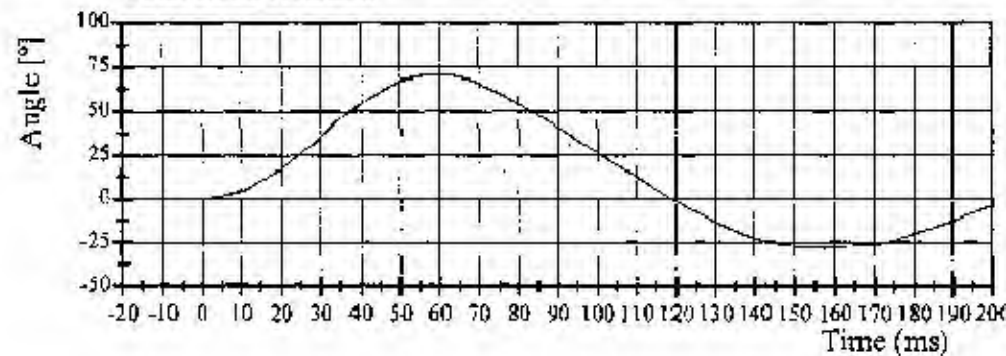


Filter Class: 60

Max: 45.2 ° at 57.7 ms

Min: -16.7 ° at 160.9 ms

Total Head Rotation



Filter Class: 60

Max: 70.6 ° at 59.2 ms

Min: -28.2 ° at 156.6 ms

10.07.2003 07:28:55 500



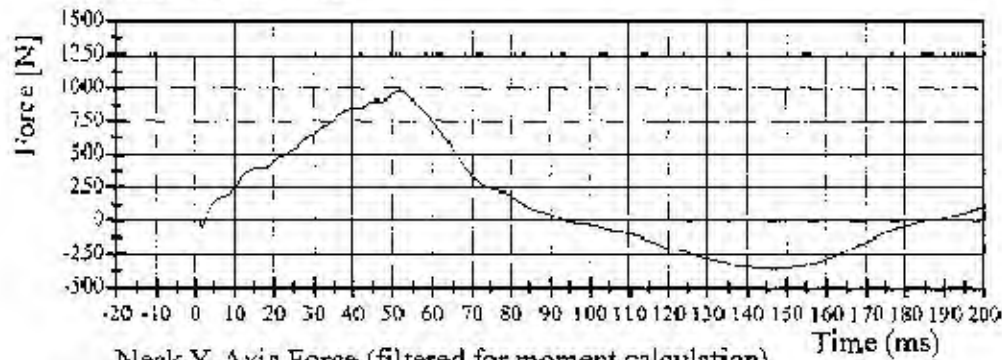
Transportation Research Center Inc.

572M Left Lateral Neck

SID HIT Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

Neck Y-Axis Force

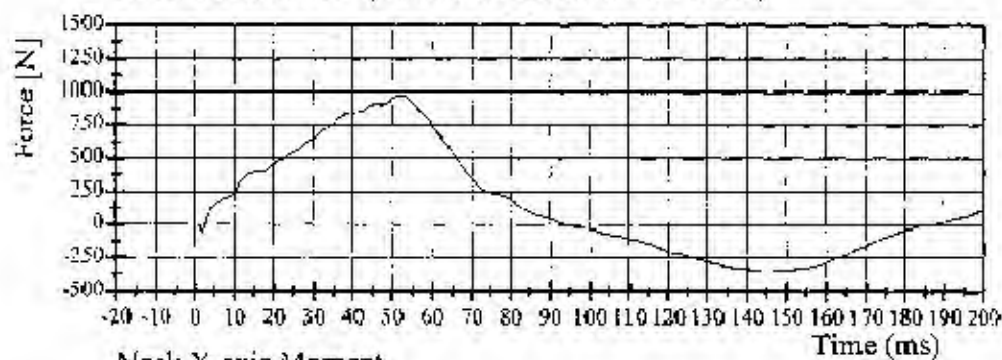


Filter Class: CFC 1000

Max: 979.9 N at 52.2 ms

Min: -358.2 N at 146.6 ms

Neck Y-Axis Force (filtered for moment calculation)

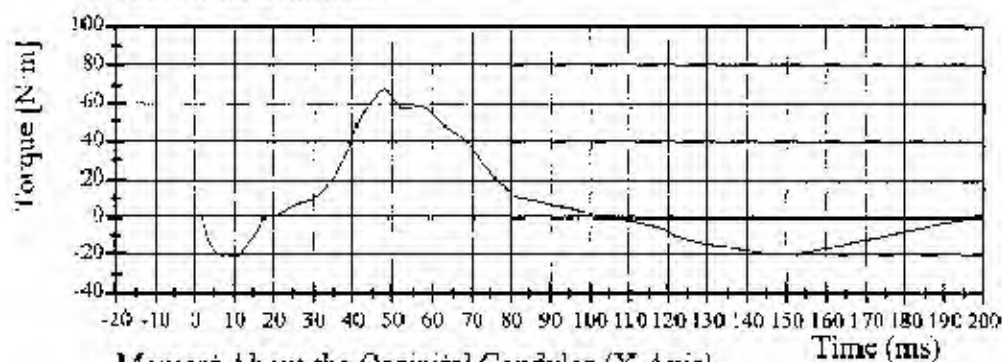


Filter Class: CFC 600

Max: 979.5 N at 52.2 ms

Min: -357.8 N at 146.7 ms

Neck X-axis Moment

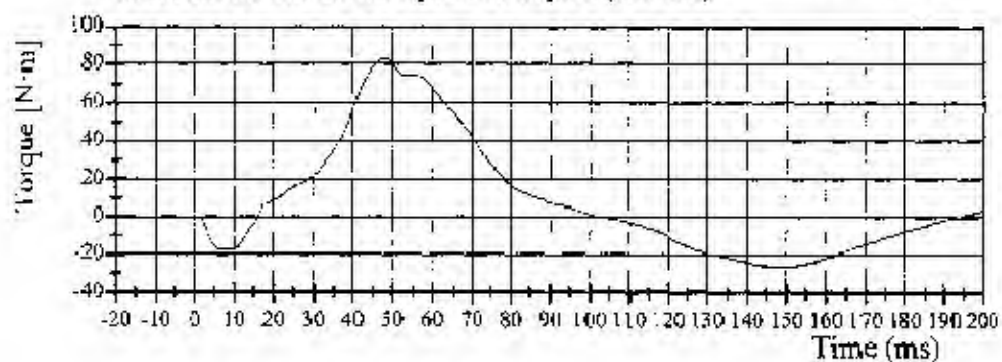


Filter Class: CFC 600

Max: 67.3 N·m at 48.2 ms

Min: -21.2 N·m at 9.9 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 83.4 ° at 48.2 ms

Min: -26.3 ° at 148.4 ms

10.07.2003 07:28:57 500



Transportation Research Center Inc.

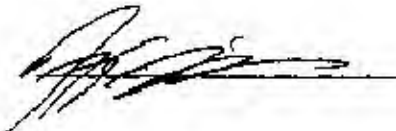
572F Thorax Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.7 C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.31 m/sec	Yes
Upper Rib Bar Peak Acceleration	37 - 46 g	38.3 g	Yes
Lower Rib Bar Peak Acceleration	37 - 46 g	37.2 g	Yes
Lower Thoracic Spine (T12) Peak Acceleration	15 - 22 g	17.0 g	Yes

Comments:

Technician



Approved



10.07.2003 07:34:05 1147

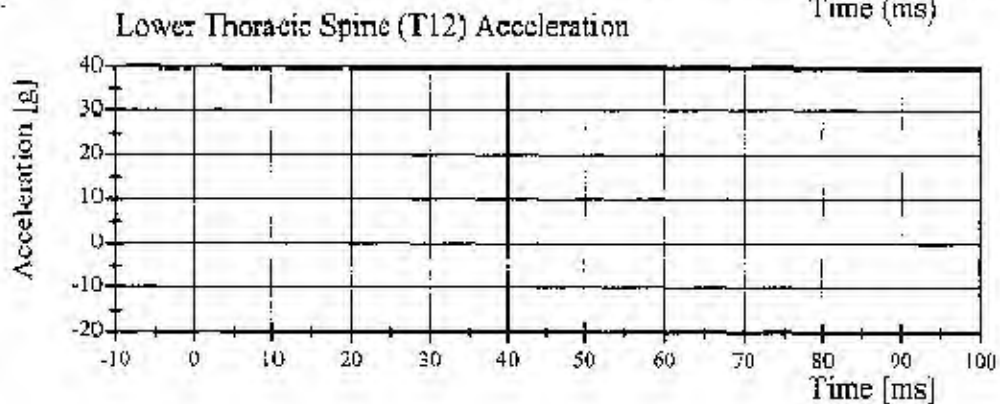
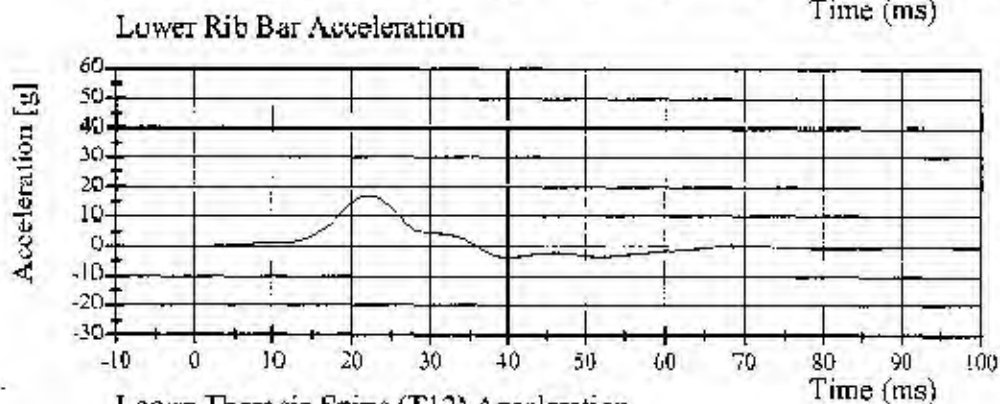
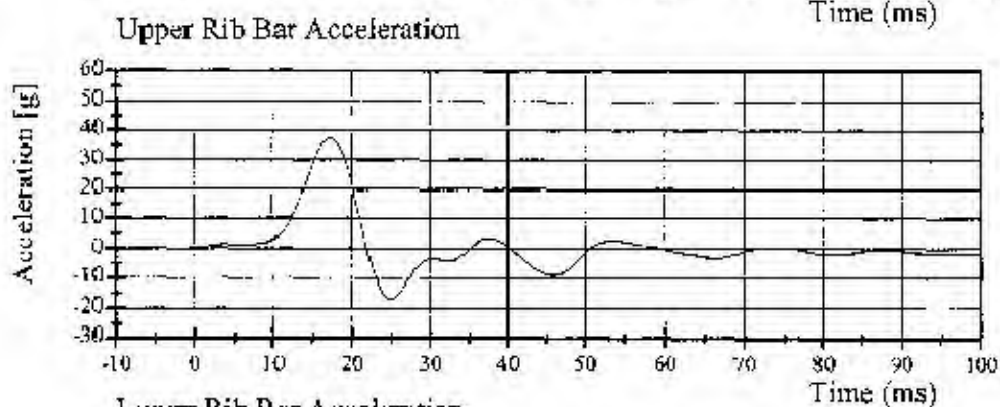
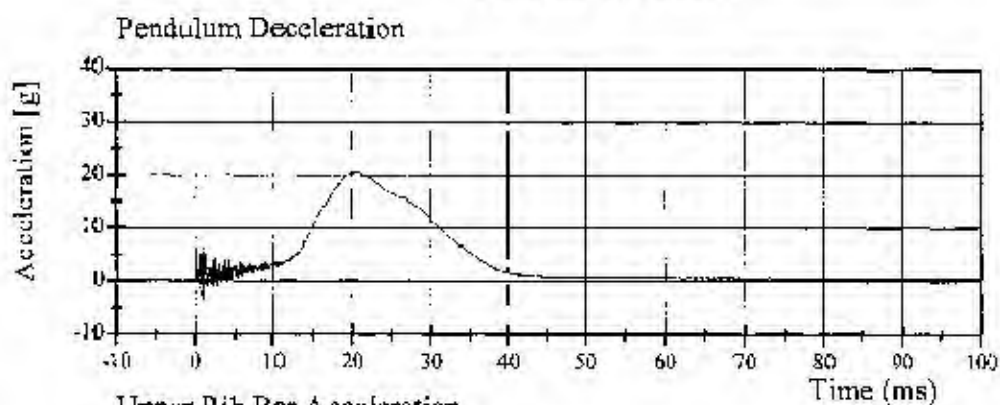


Transportation Research Center Inc.

572F Thorax Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/06/2003



10.07.2003 07:34:06 1147



Transportation Research Center Inc.

572B Abdomen Compression Test

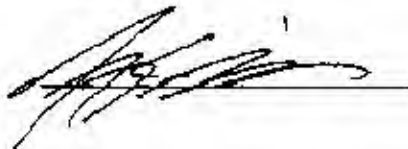
SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003

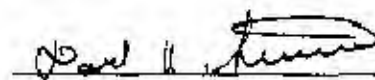
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.8 - 7.9 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



10/07/2003 07:48:49 8

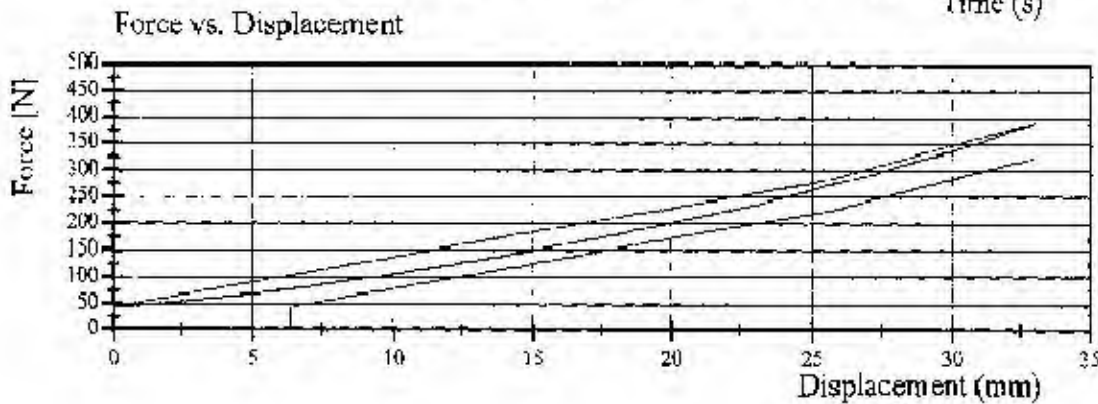
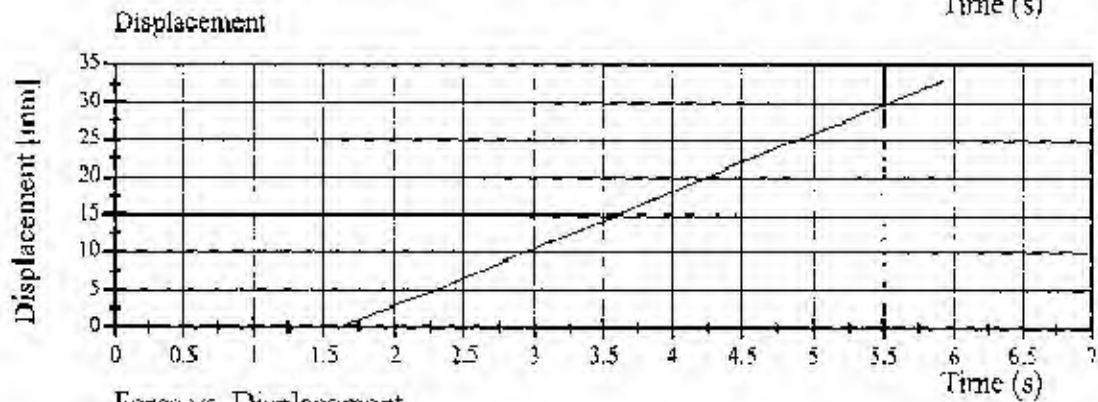
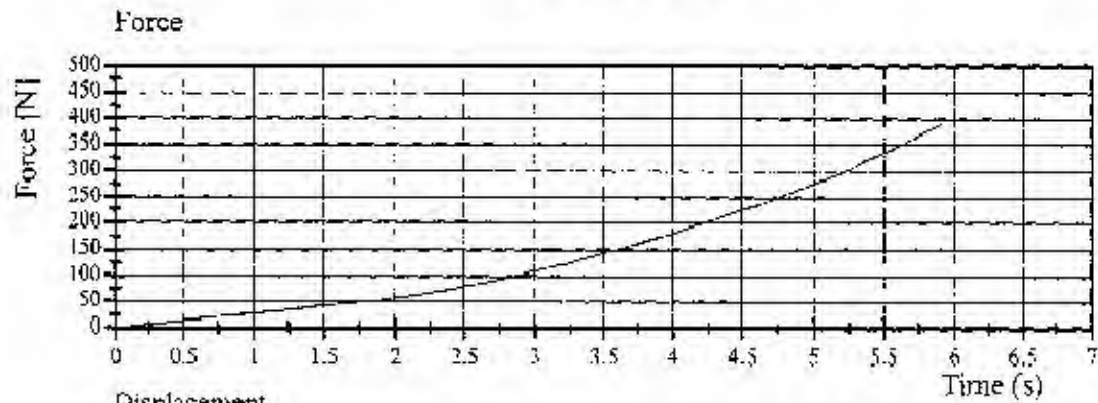


Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 055 Calibration No. 09 - 1

Test Date 10/07/2003



10.07.2003 07:48:50 8



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 07-Oct-03

TRC, INC. TEST NO: LF05509 SID/HIII SN 055 TORSO FLEX CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 - 70 %	30 %
FORCE AT 0 DEG. FLEXION	-27 - 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 - 151 N	133.4 N
FORCE AT 30 DEG OF FLEXION	151 - 205 N	164.6 N
FORCE AT 40 DEG OF FLEXION	205 - 258 N	200.2 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	5°

TEST MEETS SPECIFICATIONS

TECHNICIAN 

Transportation Research Center Inc.

572F Pelvis Test

SID HILL Serial No. 055 Calibration No. 09 - 1

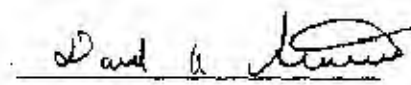
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.1 C	Yes
Relative Humidity	10 - 70 %	22 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.31 m/sec	Yes
Pelvis Peak Acceleration	40 - 60 g	44.6 g	Yes
Time Above 20 g	3 - 7 ms	6.00 ms	Yes
Unimodal requirement for pelvis acceleration	Yes	Yes	Yes

Comments:

Technician



Approved



10.07.2003 07:33:05 1152



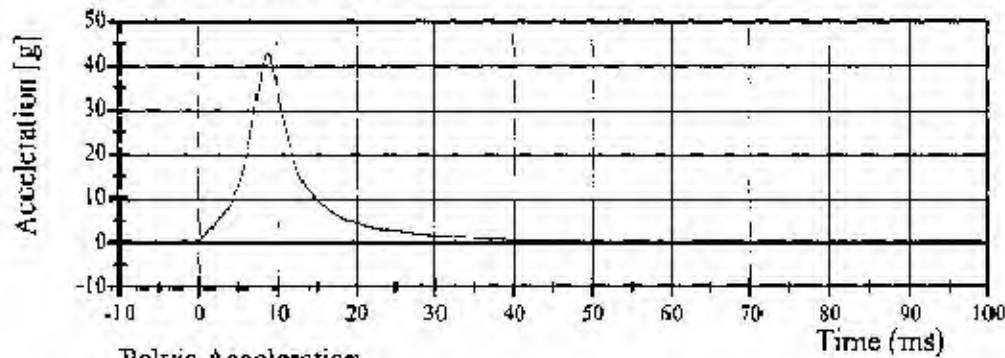
Transportation Research Center Inc.

572F Pelvis Test

SID HIM Serial No. 055 Calibration No. 09 - 1

Test Date 10/06/2003

Pendulum Deceleration

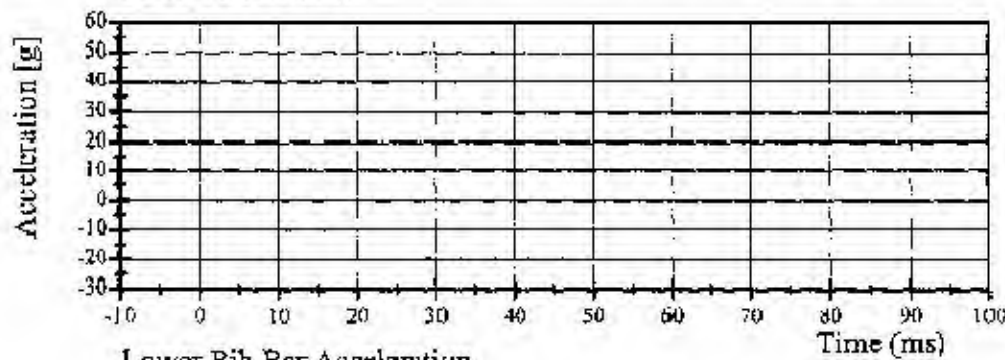


Filter Class: 1000

Max: 42.7 g at 8.6 ms

Min: -0.1 g at -92.0 ms

Pelvis Acceleration



Filter Class: FIR 100

Max: 44.6 g at 8.6 ms

Min: -9.7 g at 21.7 ms

Lower Rib Bar Acceleration

10.07.2003 07:33:06 1152



Calibration Test Results

Post-Test

SID III: 906

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.

Transportation Research Center Inc.

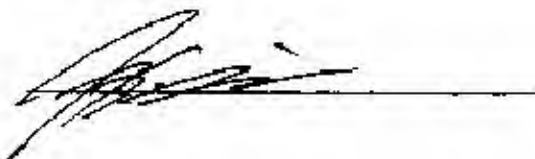
SID/HIII Dummy

External Dimensions

Serial No. 906 Calibration No. 03

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	904 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	506 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	229 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	525 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	491 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	384 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	178 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	177 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		\leq 2.5 mm	1.0 mm	Yes

Technician



Approved



TRE

Transportation Research Center Inc.

572M Left Left Lateral Head Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

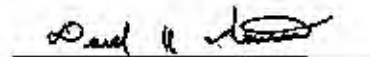
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Peak Resultant Acceleration	115 - 150 g	137.2 g	Yes
Peak Longitudinal Acceleration	15 g Max	13.3 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved



10.07.2003 06:19:30 604

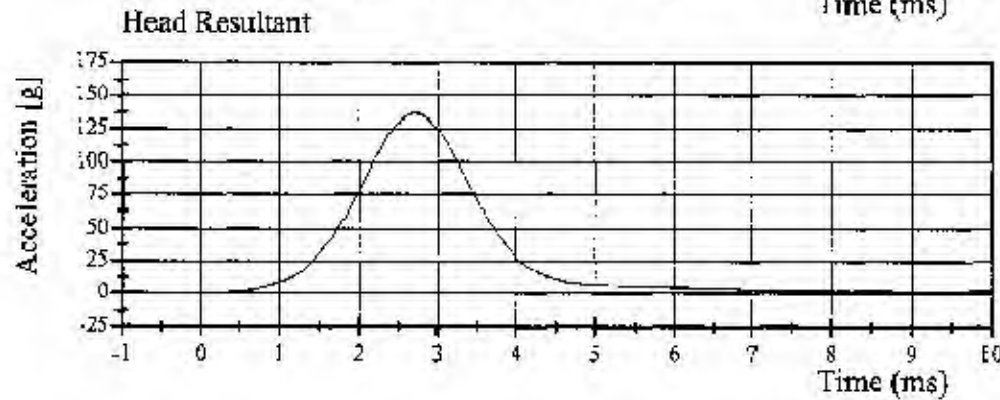
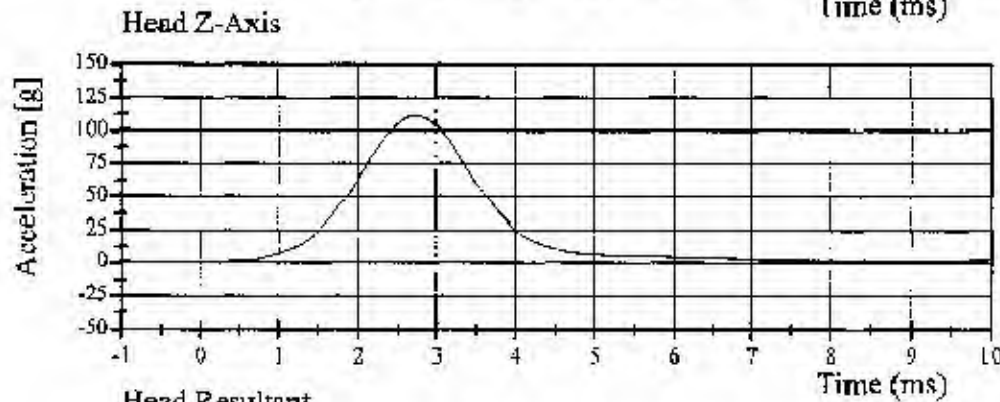
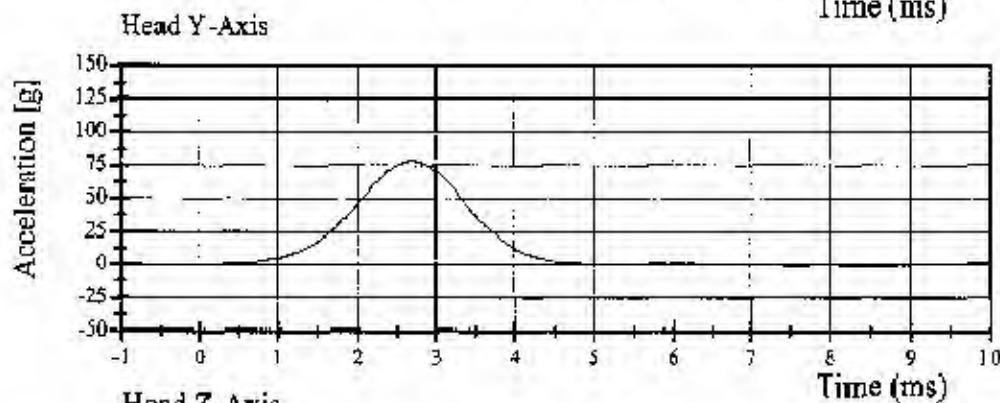
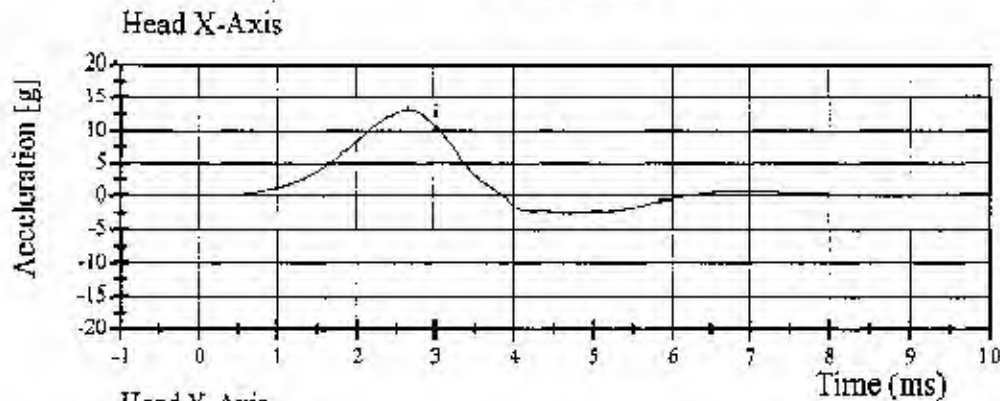


Transportation Research Center Inc.

572M Left Left Lateral Head Test

STD HTH Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003



10.07.2003 06:19:31 604



Transportation Research Center Inc.

572M Left Lateral Neck Test

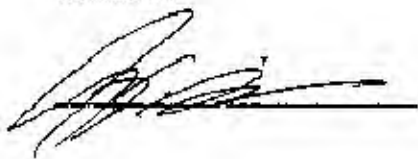
SID III Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

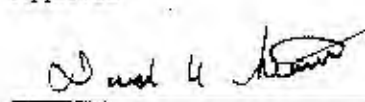
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.06 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.96 - 2.55 m/s	2.10 m/s	Yes
20 ms	4.12 - 5.10 m/s	4.56 m/s	Yes
30 ms	5.73 - 7.64 m/s	6.56 m/s	Yes
40 - 70 ms	6.27 - 7.64 m/s	7.11 - 7.23 m/s	Yes
Peak D Plane Rotation	66 - 82 °	68.9 °	Yes
Rotation Decay Time To 0° From Peak Angle	58 - 67 °	61.6 °	Yes
Peak Moment About Occipital Condyles	73.0 - 88.0 N·m	75.61 N·m	Yes
Moment Decay Time To 0 N·m From Peak Moment	49 - 64 ms	56.32 ms	Yes
Time Between Peak Rotation and Peak Moment	2 - 16 ms	10.56 ms	Yes

Comments:

Technician



Approved



10.07.2003 06:45:43 483



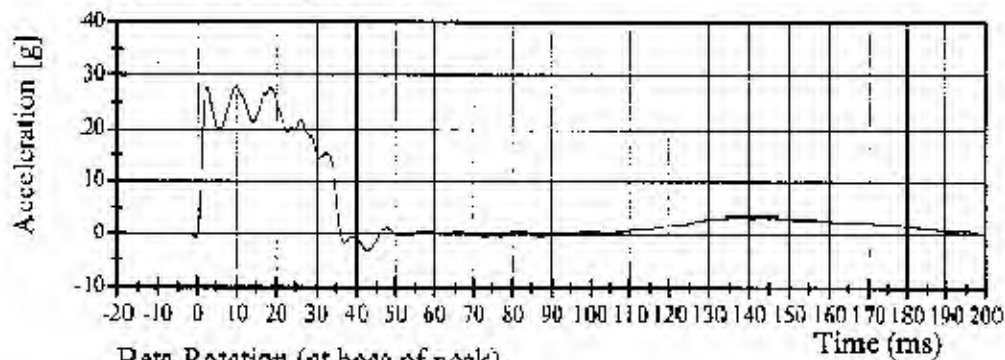
Transportation Research Center Inc.

572M Left Left Lateral Neck Test Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

Pendulum Deceleration

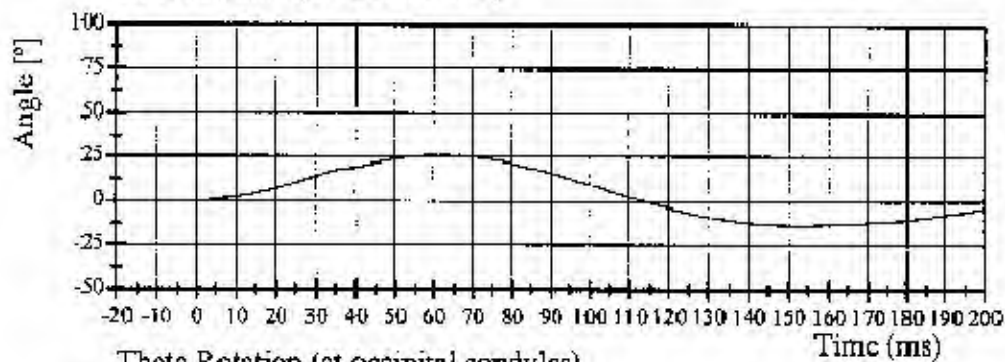


Filter Class: 180

Max: 28.1 g at 9.8 ms

Min: -3.3 g at 42.7 ms

Beta Rotation (at base of neck)

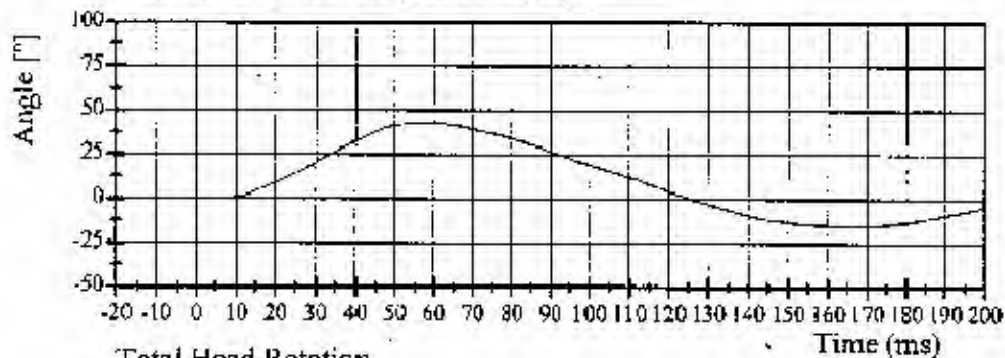


Filter Class: 60

Max: 25.7 ° at 64.6 ms

Min: -13.3 ° at 152.8 ms

Theta Rotation (at occipital condyles)

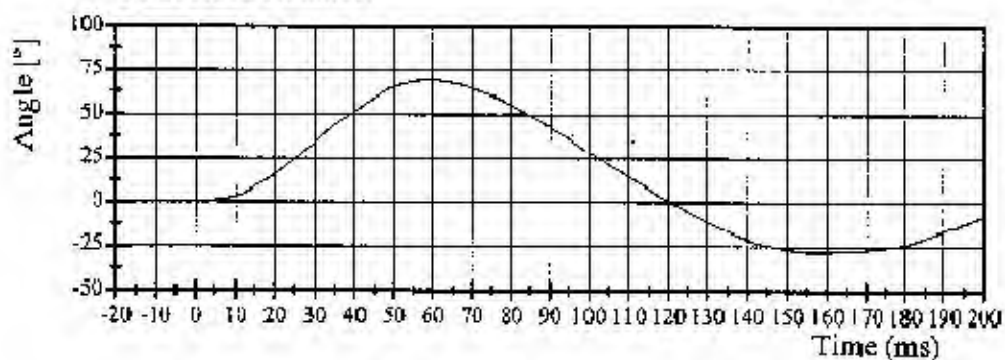


Filter Class: 60

Max: 43.2 ° at 58.2 ms

Min: -15.3 ° at 163.0 ms

Total Head Rotation



Filter Class: 60

Max: 68.9 ° at 59.1 ms

Min: -28.1 ° at 157.3 ms

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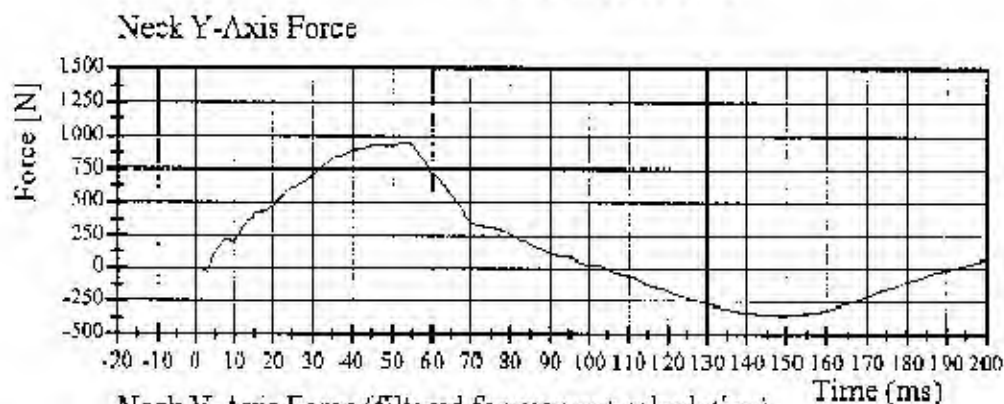


Transportation Research Center Inc.

572M Left Left Lateral Neck Test

SID HIII Serial No. 906 Calibration No. 03 - 1

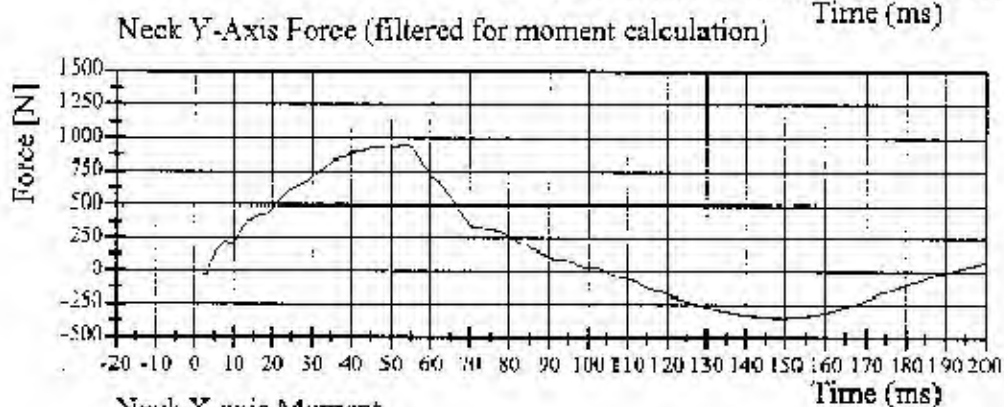
Test Date 10/07/2003



Filter Class: CFC 1000

Max: 950.3 N at 53.2 ms

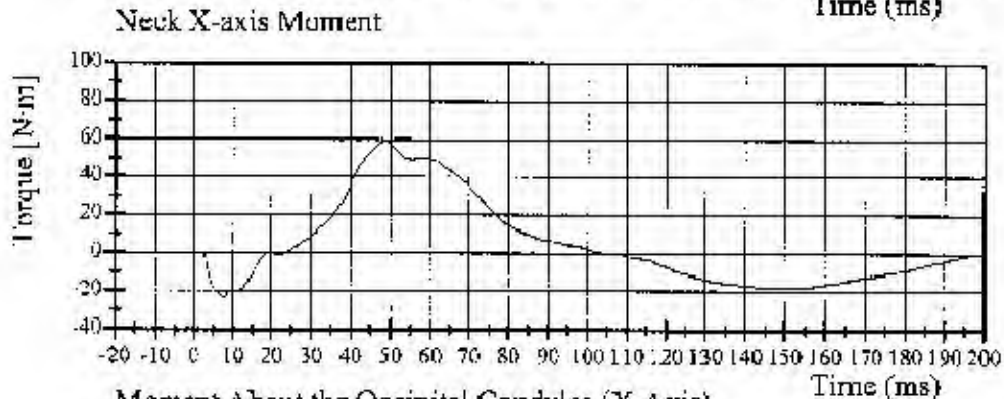
Min: -350.8 N at 149.6 ms



Filter Class: CFC 600

Max: 949.6 N at 53.4 ms

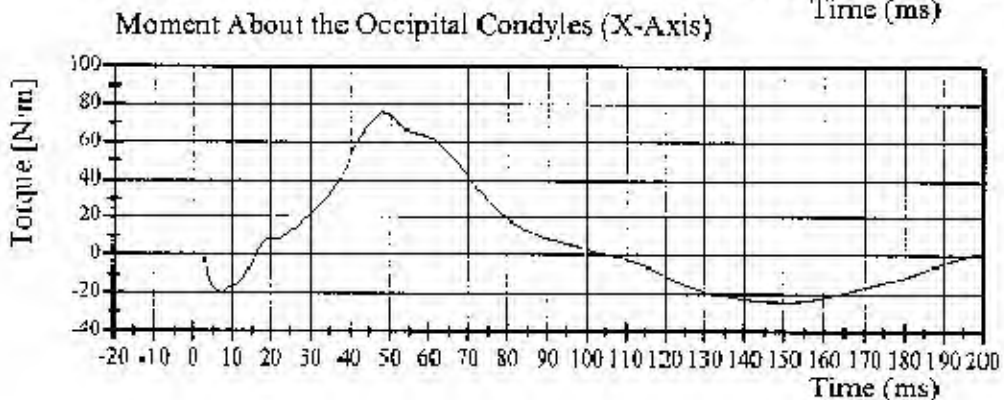
Min: -350.3 N at 148.5 ms



Filter Class: CFC 600

Max: 59.2 N·m at 48.5 ms

Min: -23.8 N·m at 7.6 ms



Filter Class: 600

Max: 75.6° at 48.6 ms

Min: -24.4° at 150.9 ms

10.07.2003 06:45:45 483



Transportation Research Center Inc.

572F Left Side Thorax Test

SID IIII Serial No. 906 Calibration No. 03 - 1

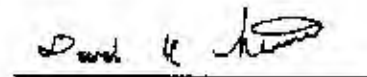
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.1 C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.32 m/sec	Yes
Upper Rib Bar Peak Acceleration	37 - 46 g	42.6 g	Yes
Lower Rib Bar Peak Acceleration	37 - 46 g	43.3 g	Yes
Lower Thoracic Spine (T12) Peak Acceleration	15 - 22 g	19.7 g	Yes

Comments:

Technician



Approved



10.07.2003 08:33:19 1143



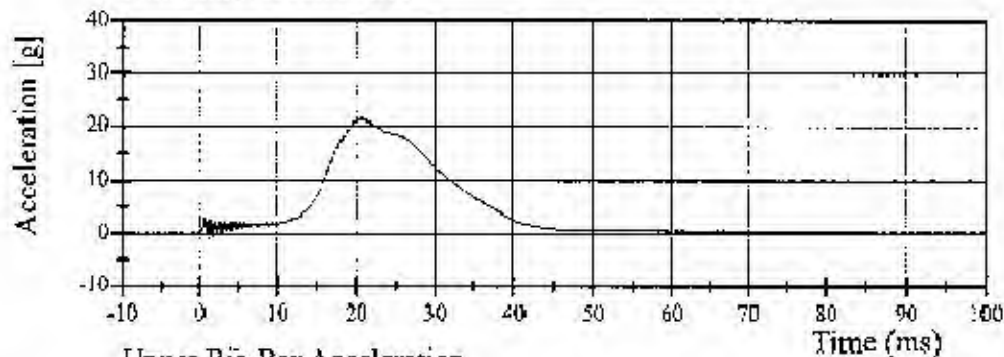
Transportation Research Center Inc.

572F Left Side Thorax Test

SID HII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

Pendulum Deceleration

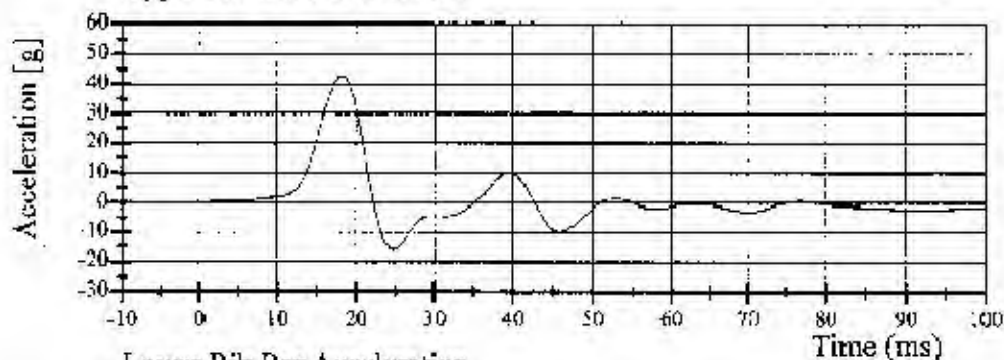


Filter Class: 1000

Max: 21.5 g at 20.6 ms

Min: -1.1 g at 1.3 ms

Upper Rib Bar Acceleration

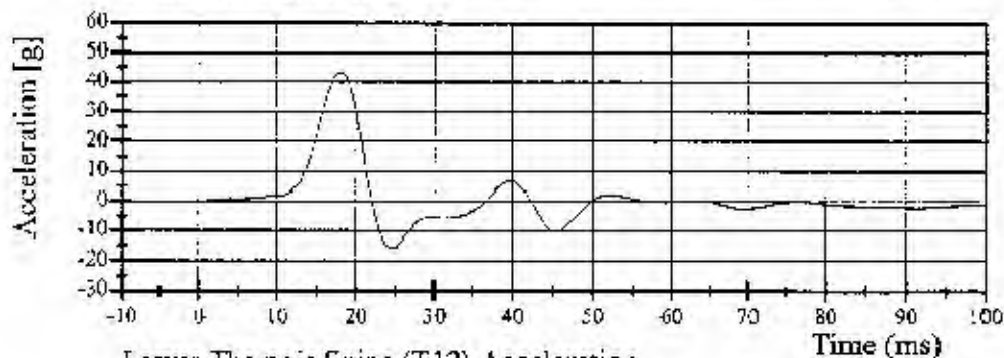


Filter Class: FIR 100

Max: 42.6 g at 18.1 ms

Min: -16.3 g at 24.9 ms

Lower Rib Bar Acceleration

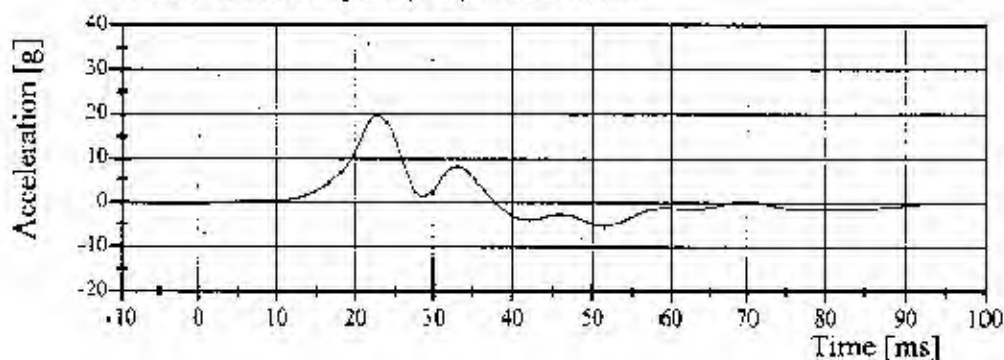


Filter Class: FIR 100

Max: 43.3 g at 18.0 ms

Min: -15.8 g at 24.9 ms

Lower Thoracic Spine (T12) Acceleration



Filter Class: FIR 100

Max: 19.7 g at 23.0 ms

Min: -5.4 g at 51.2 ms

10.07.2003 08:33:20 1143



Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/06/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.2 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician

John K. Clancy

Approved

V.L. Watten

10.06.2003 15:38:47 119

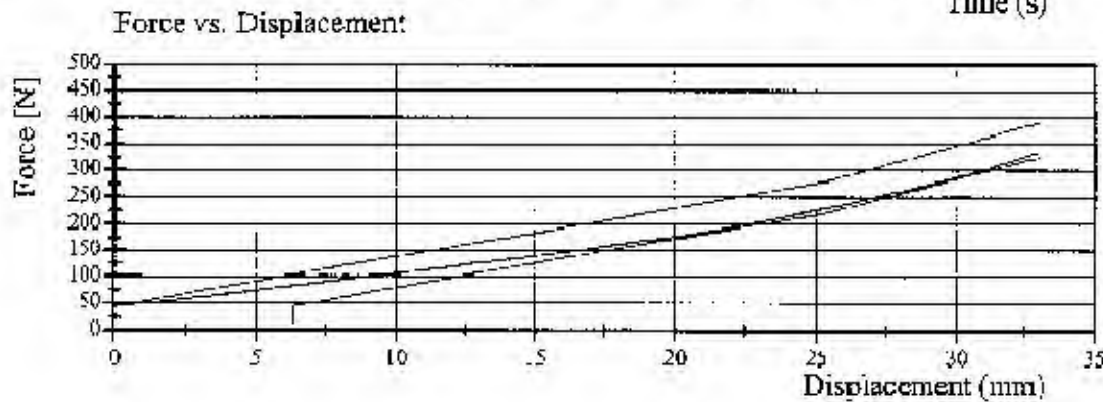
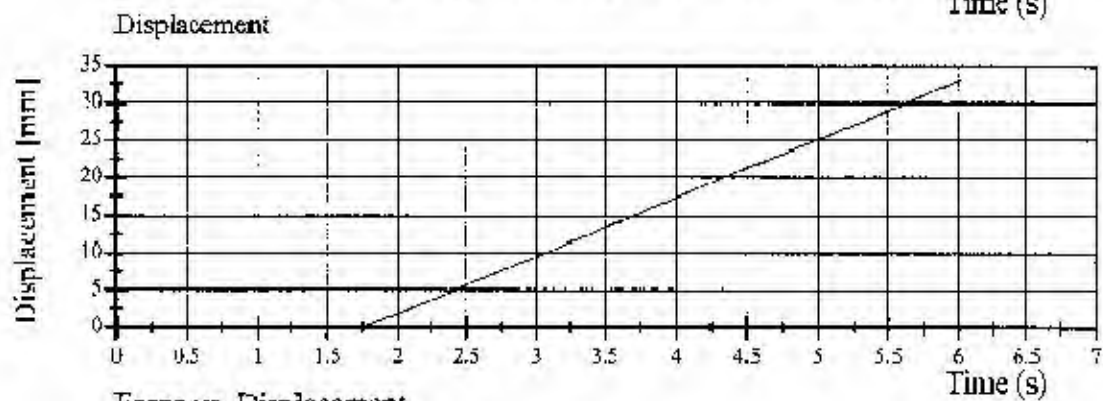
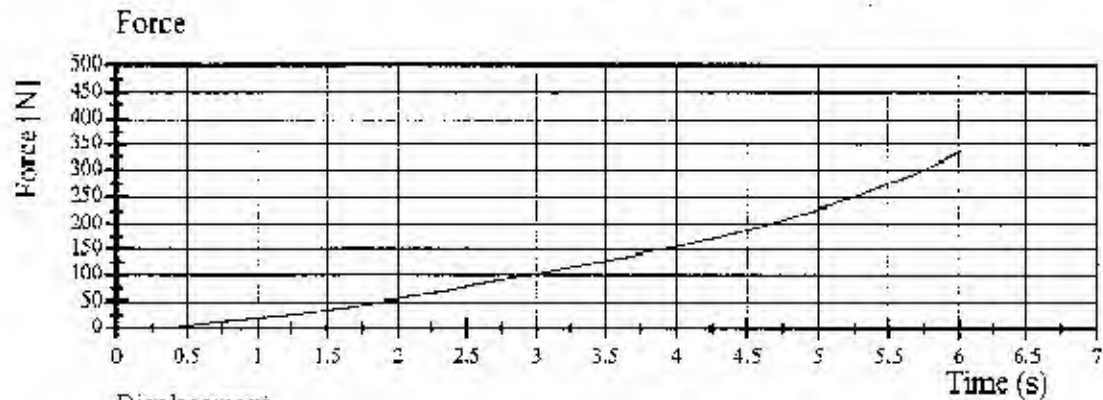


Transportation Research Center Inc.

572B Abdomen Compression Test

SID-HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/06/2003



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

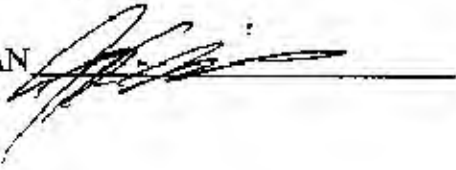
SID HIII

CAL DATE: 07-Oct-03

TRC, INC. TEST NO: 906C03TF1 SID/HIII SN 906 TORSO FLEX CAL 03

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 - 70 %	31 %
FORCE AT 0 DEG. FLEXION	-27 - 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 - 151 N	137.8 N
FORCE AT 30 DEG OF FLEXION	151 - 205 N	173.5 N
FORCE AT 40 DEG OF FLEXION	205 - 258 N	240.2 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12°	7°

TEST MEETS SPECIFICATIONS

TECHNICIAN 

Transportation Research Center Inc.

572F Left Side Pelvis Test

SID HIII Serial No. 906 Calibration No. 03 - 1

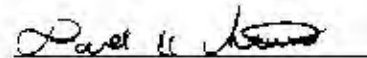
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 C	21.1 C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	4.21 - 4.33 m/sec	4.31 m/sec	Yes
Pelvis Peak Acceleration	40 - 60 g	45.8 g	Yes
Time Above 20 g	3 - 7 ms	5.92 ms	Yes
Unimodal requirement for pelvis acceleration	Yes	Yes	Yes

Comments:

Technician



Approved



10.07.2003 08:39:37 1168



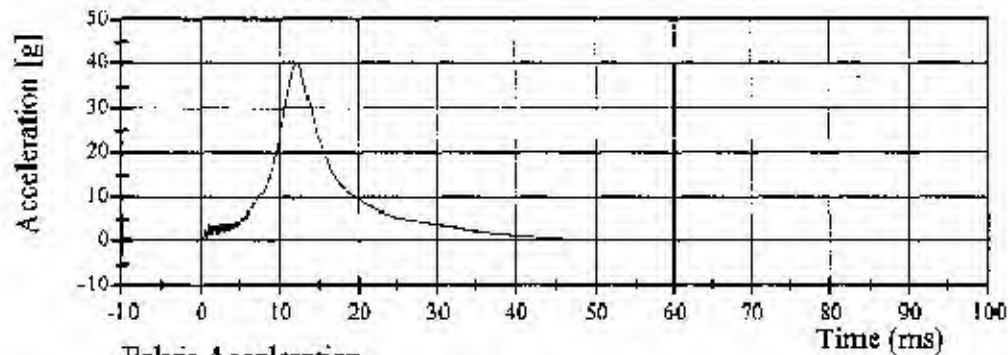
Transportation Research Center Inc.

572F Left Side Pelvis Test

SID HIII Serial No. 906 Calibration No. 03 - 1

Test Date 10/07/2003

Pendulum Deceleration

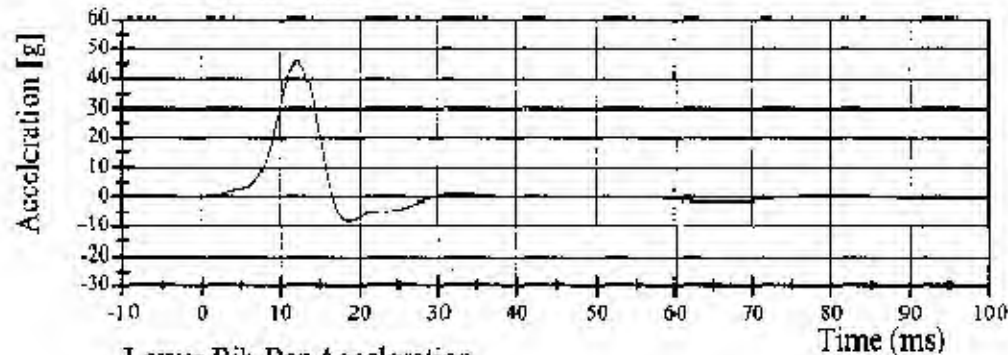


Filter Class: 1000

Max: 40.1 g at 12.3 ms

Min: -0.1 g at -90.9 ms

Pelvis Acceleration



Filter Class: FIR 100

Max: 45.8 g at 12.2 ms

Min: -8.2 g at 18.6 ms

Lower Rib Bar Acceleration

10.07.2003 08:30:38 1168



Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 09/24/03Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	PRE-USE	
HEAD:		
Head Ballast Condition	X	
Accel. Mount Bolts and Cables	X	
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left)	(Right) N/A
NECK:		
Rubber Condition and Separation From Ead Caps	X	
THORAX: Left side configuration		
Stacked Shoulder Foams and Bolts	X	
* Rib Cage Spring and Support Assembly	X	
* Rib Cage Bolts	X	
* Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
* Location and Adjustment of Chest Pot Bracket and Collars	X	
* Chest Pot Rod End Nuts and Eyebolt	X	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
PELVIS:		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
LEGS AND FEET:		
Femur Load Cell Bolts (30 lb/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Prior Condition	X	
OTHER:		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	

Inspection Completed By: J. Clarridge Date: 09/23/03

Type: SID HIII S/N: 906 Mfr: Unknown Test Date: 09/24/03Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	PRE-USE	
HEAD:		
Head Ballast Condition	X	
Accel. Mount Bolts and Cables	X	
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left)	(Right) N/A
NECK:		
Rubber Condition and Separation From End Caps	X	
THORAX: Left side configuration		
Stacked Shoulder Foams and Bolts	X	
* Rib Cage Spring and Support Assembly	X	
* Rib Cage Bolts	X	
* Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
* Location and Adjustment of Chest Pot Bracket and Collars	X	
* Chest Pot Rod End Nuts and Eyebolt	X	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
PELVIS:		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
LEGS AND FEET:		
Femur Load Cell Bolts (30 ft/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
OTHER:		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	

Inspection Completed By: J. ClarridgeDate: 09/23/03

Transportation Research Center Inc.

SID HIII Post-Use Inspection

Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 09/24/03

Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
Head Ballast Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
THORAX: Left side configuration	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
PELVIS:	
Iliac Crest bone	X
Flesh Condition	X
Hip Range of Motion	X
LEGS AND FEET:	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X

NOTES: No damage to report.

Inspection Completed By: J. Clarridge

Date: 10/02/03

Transportation Research Center Inc.

SID HIII Post-Use Inspection

Type: SID HIII S/N: 906 Mfr: Unknown Test Date: 09/24/03

Proj./Seg. No.: 20020455-2010 Test Eng.: Walt Dudek

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
Head Ballast Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
THORAX: Left side configuration	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
PELVIS:	
Iliac Crest bone	X
Flesh Condition	X
Hip Range of Motion	X
LEGS AND FEET:	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X

NOTES: No damage to report.

Inspection Completed By: J. Clarridge

Date: 10/02/03

Appendix D

Test Equipment List and Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:

- +X: Forward
- +Y: Rightward
- +Z: Downward

Potentiometers:

- +Chest longitudinal deflection: Outward
- +Chest lateral deflection: Rightward
- +Seat belt displacement: Outward
- +Seat belt extension: Elongation
- +Knee slider displacement: Distance between femur and tibia increased (in relation to a seated dummy)

Rotation potentiometers:

- +About the X-axis: Left foot-eversion
Right foot-inversion
- +About the Y-axis: Left/right foot-dorsiflexion
- +About the Z-axis: Left foot-internal
Right foot-external

Load cells:

- +Femur force: Tension
- +Seat belt force: Tension
- +Barrier force: Tension

Neck load cells:

- +X force: Head pushed rearward
- Y force: Head pushed leftward
- +Z force: Head pulled upward (tension on neck)
- X moment: Left ear rotating toward left shoulder
- +Y moment: Chin rotating toward chest
- +Z moment: Chin rotating toward left shoulder

Tibia load cells:

- +X force: Ankle forward, knee rearward
- +Y force: Ankle rightward, knee leftward
- +Z force: Tension
- +X moment: Bottom of tibia moving leftward
- +Y moment: Bottom of tibia moving rearward

Sign Convention, Cont'd.
SAE J211 MAR95

Lumbar load cells:

+X force:	Chest rearward, pelvis forward
+Y force:	Chest leftward, pelvis rightward
+Z force:	Chest upward, pelvis downward
+X moment:	Left shoulder toward left hip
+Y moment:	Sternum toward front of legs
+Z moment:	Right shoulder forward, left shoulder rearward

Frequency Response Classes
SAE J211 MAR95

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	600
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head Form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report; occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

Channel Report

9/24/2003 7:58:42 AM

Name of Test 030924-1

System

MINIDAU

Name of DAU DAU6

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol. Cal.	Group	Mfg.	Model
6001	P25298	HEDXG1	Head Accel X	Rwd	801.41499	-	OK	Endevco	7264C-2K-2-180
6002	P25861	IEDYGI	Head Accel Y	Lft	807.76208	-	OK	Endevco	7264C-2K-2-180
6003	P25261	HEDZG1	Head Accel Z	Up	803.12465	-	OK	Endevco	7264C-2K-2-180
6004	P25067	IEDXR1	Head Accel X Red	Rwd	803.43972	-	OK	Endevco	7264C-2K-2-180
6005	P24511	HEDYR1	Head Accel Y Red	Lt	789.83092	-	OK	Endevco	7264C-2K-2-180
6006	P25063	HEDZR1	Head Accel Z Red	Up	806.42620	-	OK	Endevco	7264C-2K-2-180
6007	1716-0534-FX	NEKXF1	Neck Force X	Hd	8890.8019	-	OK	Denton	1716
6008	1716-0534-FY	NEKYF1	Neck Force Y	Hd	8885.0977	+	OK	Denton	1716
6009	1716-0534-FZ	NEKZF1	Neck Force Z	Hd	13357.627	+	OK	Denton	1716
6010	1716-0534-MX	NEKXM1	Neck Moment X	Rt Ear	282.37048	-	OK	Denton	1716
6011	1716-0534-MY	NEKYM1	Neck Moment Y	Chn	282.42609	+	OK	Denton	1716
6012	1716-0534-MZ	NEKZM1	Neck Moment Z	Chn	282.48456	+	OK	Denton	1716
6013	P25068	LURYG1	Left Upper Rib Y	Rgt	794.82124	+	OK	Endevco	7264C-2K-2-180
6014	P25069	LURYR1	Left Upper Rib Red Y	Rgt	808.28492	-	OK	Endevco	7264C-2K-2-180
6015	P25305	LLRYG1	Left Lower Rib Y	Rgt	802.92314	+	OK	Endevco	7264C-2K-2-180
6016	P25395	LLRYR1	Left Lower Rib Red Y	Rgt	806.45161	+	OK	Endevco	7264C-2K-2-180
6017	P24393	T12YG1	Lower Spine Y	Lt	402.81973	-	OK	Endevco	7264C-2K-2-180
6018	P24627	T12YR1	Lower Spine Red Y	Lt	402.18373	-	OK	Endevco	7264C-2K-2-180
6019	P25397	PEVYG1	Pelvis Accel Y	Lt	398.38157	-	OK	Endevco	7264C-2K-2-180
6020	P25231	PEVYR1	Pelvis Accel Red Y	Lt	399.27631	-	OK	Endevco	7264C-2K-2-180
6021	J26885	HEDXG4	Head Accel X	Rwd	803.17505	-	OK	Endevco	7264C-2K-2-180
6022	J26864	HEDYG4	Head Accel Y	Lt	790.78244	-	OK	Endevco	7264-2000T7
6024	J27950	HEDZG4	Head Accel Z	Up	791.95668	-	OK	Endevco	7264-2000T7
6025	J27271	HEDXR4	Head Accel X Red	Rwd	799.75007	-	OK	Endevco	7264-2000T7
6026	J27283	HEDYR4	Head Accel Y Red	Lt	809.00012	-	OK	Endevco	7264-2000T7
6027	J26980	HEDZR4	Head Accel Z Red	Up	789.53861	-	OK	Endevco	7264-2000T7
6028	1716A-1535-FX	NEKXF4	Neck Force X	Hd	8391.7885	-	OK	Denton	1716A
6029	1716A-1535-FY	NEKYF4	Neck Force Y	Hd	8908.0907	+	OK	Denton	1716A
6030	1716A-1535-FZ	NEKZF4	Neck Force Z	Hd	13330.563	+	OK	Denton	1716A
6031	1716A-1535-MX	NEKXM4	Neck Moment X	Rt Ear	282.72169	-	OK	Denton	1716A
6032	1716A-1535-MY	NEKYM4	Neck Moment Y	Chn	282.57318	+	OK	Denton	1716A

Channel Report

9/24/2003 7:58:43 AM

Name of Test 030924-1

System MINIDAU

Name of DAW DAU7

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol. Cal.	Group	Mfg.	Model
7001	1716A-1535-MZ	NEKZM4	Neck Moment Z	Chn	283.00597	1	906n	Dennon	1716A
7002	P27850	LURYG4	Left Upper Rib Y	Rgt	792.32435	+	906n	Endevco	7264C-2K-2-180
7003	P25374	LURYR4	Left Upper Rib Red Y	Rgt	799.23822	+	906n	Endevco	7264C-2K-2-180
7004	P29211	LURYG4	Left Lower Rib Y	Rgt	787.98325	+	906n	Endevco	7264C-2K-2-180
7005	P25075	LURYR4	Left Lower Rib Red Y	Rgt	797.20976	1	906n	Endevco	7264C-2K-2-180
7006	P21635	L12YG4	Lower Spine Y	Lft	397.33043	-	906n	Endevco	7264C-2K-2-180
7007	P24564	L12YR4	Lower Spine Red Y	Lft	397.12087	-	906n	Endevco	7264C-2K-2-180
7008	P21652	PEVYG4	Pelvis Accel Y	Lft	397.45998	-	906n	Endevco	7264C-2K-2-180
7009	P25318	PEVYR4	Pelvis Accel Red Y	Lft	402.78171	-	906n	Endevco	7264C-2K-2-180
7010	P28241	RFSXG1	RGT SIDE SILL FRNT ST X	FWD	402.43979	+	906n	Endevco	7264C-2K-2-180
7011	P27498	RFSYG1	RGT SIDE SILL FRNT ST Y	Lt	1004.9067	-	906n	Endevco	7264C-2K-2-180
7012	P27200	RSZG1	RGT SIDE SILL FRNT ST Z	UP	395.61118	-	906n	Endevco	7264C-2K-2-180
7013	P27939	RRSXG1	RGT SIDE SILL RR ST X	FWD	398.80358	+	906n	Endevco	7264C-2K-2-180
7014	P23816	RRSYG1	RGT SIDE SILL RR ST Y	Lt	994.56099	-	906n	Endevco	7264C-2K-2-180
7015	P27913	RRSZG1	RGT SIDE SILL RR ST Z	UP	399.00249	-	906n	Endevco	7264C-2K-2-180
7016	P28265	RDKXG1	RR FLR PAN ABV AXLE X	RR	1012.0177	-	906n	Endevco	7264C-2K-2-180
7017	P28119	RDKYG1	RR FLR PAN ABV AXLE Y	Lt	1023.5496	-	906n	Endevco	7264C-2K-2-180
7018	P28081	RDKZG1	RR FLR PAN ABV AXLE Z	UP	1007.7549	-	906n	Endevco	7264C-2K-2-180
7019	P27173	LRSYG1	LFT SIDE SILL RR ST Y	RT	976.63328	1	906n	Endevco	7264C-2K-2-180
7020	P29287	L12SYG1	LFT SIDE SILL FRNT ST Y	RT	1536.6146	+	906n	Endevco	7264C-2K-2-180
7021	P27167	RRTYG1	RGT RR OCP COMP Y	RT	1447.8000	+	906n	Endevco	7264C-2K-2-180
7022	P22834	L1BYG1	LFT LOWER B-POST Y	RT	1484.9187	+	906n	Endevco	7264C-2K-2-180
7023	P28313	L1BYG1	LFT MID B-POST Y	RT	1528.9058	1	906n	Endevco	7264C-2K-2-180
7024	P28618	L1AYG1	LFT LOWER A-POST Y	Lt	1476.0998	-	906n	Endevco	7264C-2K-2-180
7025	P29285	L1AYG1	LFT MID A-POST Y	Lt	1512.3320	-	906n	Endevco	7264C-2K-2-180
7026	P27354	LFTYG1	LFT FRNT ST TRK Y	RT	1551.7972	1	906n	Endevco	7264C-2K-2-180
7027	P28272	LRTYG1	LFT RR ST TR Y	RT	1478.7430	+	906n	Endevco	7264C-2K-2-180
7028	P28620	VCGXG1	VEH C/G X	FWD	1000.6253	1	906n	Endevco	7264C-2K-2-180
7029	P28251	VCGYG1	VEH C/G Y	Lt	596.47729	-	906n	Endevco	7264C-2K-2-180
7030	P25042	VCGZG1	VEH C/G Z	UP	1015.2485	-	906n	Endevco	7264C-2K-2-180

Channel Report

9/24/2003 7:58:43 AM

Name of Test 030924-1

Name of DAU DAU8

System MINIDAU

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol. Cal.	Group	Mfg.	Model
8001	P27554	BCGXG1	MDB CG X-AXIS	FWD	810.12658 g	+	7/18/2003	OK	-1
8002	P28109	BCGYG1	MDB CG Y-AXIS	LT	798.10450 g	-	7/19/2003	OK	-1
8003	P27976	BCGZG1	MDB CG Z-AXIS	UP	790.24540 g	-	7/18/2003	OK	-1
8004	P27385	LRRXG1	MDB I.T RR X-AXIS	FWD	799.11348 g	+	7/19/2003	OK	-1
8005	P27371	LRRYG1	MDB I.T RR Y-AXIS	LT	800.80080 g	-	7/19/2003	OK	-1
								Endevco	7264C-2K-2-180
								Endevco	7264C-2K-2-180
								Endevco	7264C-2K-2-180
								Endevco	7264C-2K-2-180
								Endevco	7264C-2K-2-180

page 3 of 3

Digital and System Channel Report

2003-09-24 07:59:01

Name of Test 030924-1

enable Channel

Yes 6501

Short Name

DIG6

System MINDAU

Type

dig0

Name of DAU DAU6

Data File

DAT66501

Module Type

KM3710 Controller

description

bit position	bit	short	long	description
MSB = bit 15	1	SHLET1	DRIVER SHOULDER CONTACT	1
bit 14	1	PEVET1	DRIVER PELVIS CONTACT	2
bit 13	1	SHLET4	PASSENGER SHOULDER CONTACT	3
bit 12	1	PEVET1	PASSENGER PELVIS CONTACT	4
bit 11	0			
bit 10	0			
bit 09	0			
bit 08	0			
bit 07	0			
bit 06	0			
bit 05	0			
bit 04	0			
bit 03	0			
bit 02	0			
bit 01	0			
LSB = bit 00	0			

Digital and System Channel Report

2003-09-24 07:59:01

Name of Test	030924-1	System	MINIDAU	Name of DAU	DAU8	description
enable Channel	Short Name	Type		Data File	Module Type	
d						
Yes	8501	DIG8		DAT88501	KM3710 Controller	
bit position	bit	short	long			description
MSB = bit 15	1	MDBLI	MDB RT SIDE CONTACT SWITCH	1		
bit 14	1	MDBLI	MDB LT SIDE CONTACT SWITCH	2		
bit 13	0					
bit 12	0					
bit 11	0					
bit 10	0					
bit 09	0					
bit 08	0					
bit 07	0					
bit 06	0					
bit 05	0					
bit 04	0					
bit 03	0					
bit 02	0					
bit 01	0					
LSB = bit 00	0					

Dummy 055n Type HMI/SID Description NHSTA - 055n SID-LEFT IMP. CONFIG. w/RED ACCELS (CAL'd) 8-22-03(DKS)

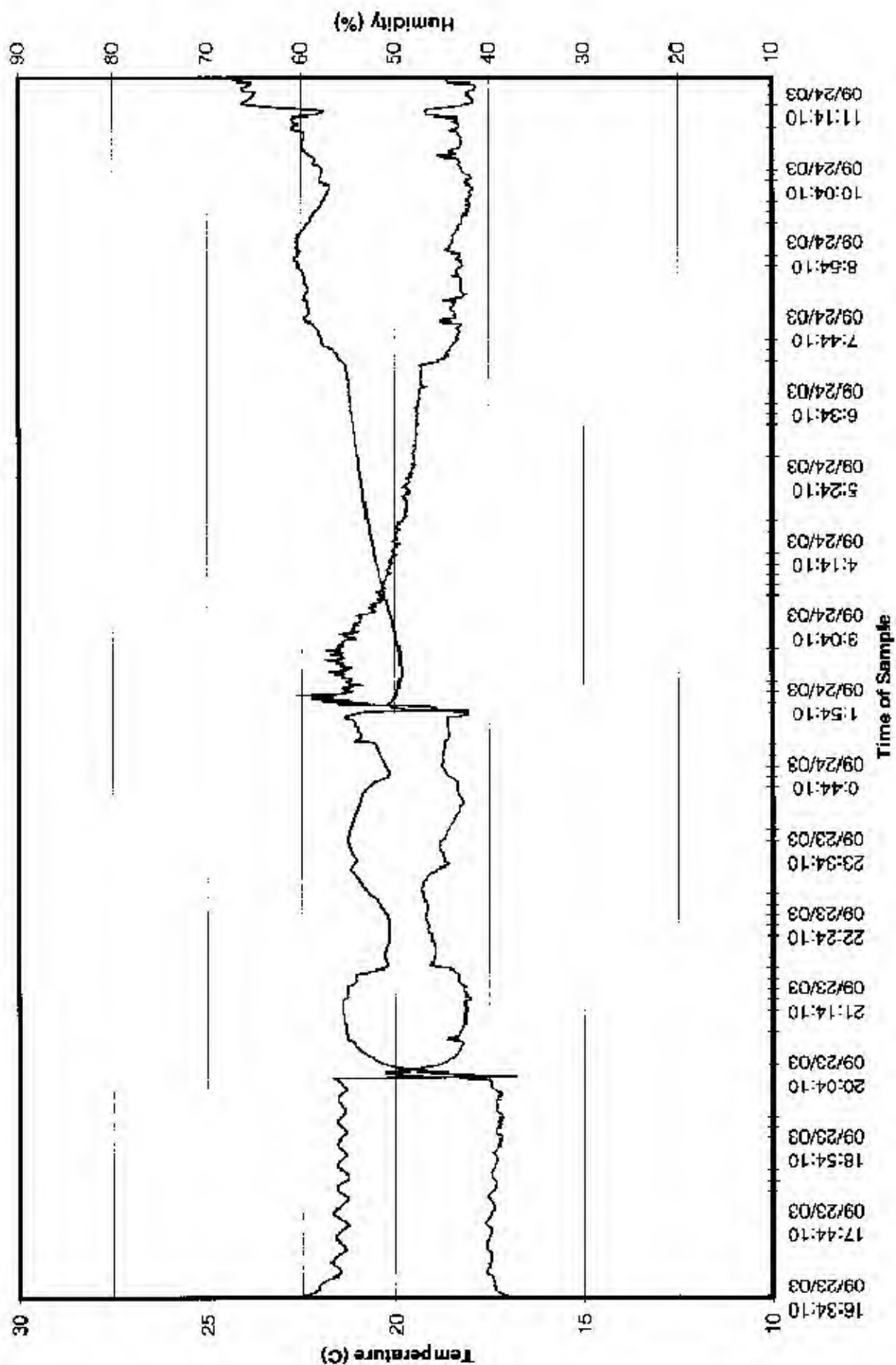
Chsman	Location	Model	Name	Manufacturer	Sens./m V/V/	Fullscal	Caldat	Pos Output	Flip
UEDXG	Lead Accel X	7264C-2K-2-18	P25298	Endevco	0.02203	2000	9/18/2003	Rwd	1
UEDYG	Lead Accel Y	7264C-2K-2-18	P25061	Endevco	0.01811	2000	8/22/2003	Lft	1
UEDZG	Lead Accel Z	7264C-2K-2-18	P25261	Endevco	0.01723	2000	8/22/2003	Up	1
UEDXR	Lead Accel X Red	7264C-2K-2-18	P25067	Endevco	0.01634	2000	8/22/2003	Rwd	1
UEDYR	Lead Accel Y Red	7264C-2K-2-18	P24511	Endevco	0.01752	2000	8/22/2003	Lft	1
UEDZR	Lead Accel Z Red	7264C-2K-2-18	P25063	Endevco	0.01814	2000	8/22/2003	Up	1
NEKXF	Neck Force X	1716	1716-0534-PX	Denton	0.000193247	N	8896.4	Hd Fd Cst Rr	1
NEKYF	Neck Force Y	1716	1716-0534-PY	Denton	0.000181781	N	8896.4	Hd Lft Cst Rt	0
NEKZF	Neck Force Z	1716	1716-0534-PZ	Denton	0.000087114	N	13344.6	Hd Up Cst Dn	0
NEKXM	Neck Moment X	1716	1716-0534-MX	Denton	0.00588708	N	282.5	Rt Ltr to Rt Shld	1
NEKYM	Neck Moment Y	1716	1716-0534-MY	Denton	0.005773451	N	282.5	Chn to Strmn	0
NEKZM	Neck Moment Z	1716	1716-0534-MZ	Denton	0.00839115	N	282.5	Chn to Lt Shld	0
LURYG	Left Upper Rib Y	7204C-2K-2-18	P25068	Endevco	0.01741	g	2000	Rgt	0
LURYR	Left Upper Rib Red Y	7204C-2K-2-18	P25069	Endevco	0.01712	g	2000	Rgt	0
LLRYG	Left Lower Rib Y	7204C-2K-2-18	P25305	Endevco	0.02057	g	2000	Rgt	0
LLRYR	Left Lower Rib Red Y	7204C-2K-2-18	P25305	Endevco	0.02048	g	2000	Rgt	0
T12YG	Lower Spine Y	7264C-2K-2-18	P24393	Endevco	0.01986	g	2000	Lft	1
T12YR	Lower Spine Red Y	7264C-2K-2-18	P24627	Endevco	0.01845	g	2000	Lft	1
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P25397	Endevco	0.01836	g	2000	Lft	1
PEVYR	Pelvis Accel Red Y	7204C-2K-2-18	P25231	Endevco	0.01781	g	2000	Lft	1

NIITSA - 906n SID-LEFT IMP. CONFIG. w/RED ACCEL'S, ICAL'D 9-9-03(DKS)

Dummy 906n Type IIII/SID

Chsman	Location	Type	Model	Name	Description	Manufacturer	Sens./mV/V/	Fullseat	Calcat	Pos Output	Flip
HEDXG	Head Accel X		7264-2000TZ	J26883		Endevco	0.02361	g	2000	9/9/2003	Rwd
HEDYG	Head Accel Y		7264-2000TZ	J26864		Endevco	0.02398	g	2000	9/9/2003	Lft
HEDZG	Head Accel Z		7264-2000TZ	J27950		Endevco	0.02586	g	2000	9/9/2003	Up
HEDXR	Head Accel X Red		7264-2000TZ	J27271		Endevco	0.03201	g	2000	9/9/2003	Rwd
HEDYR	Head Accel Y Red		7264-2000TZ	J27283		Endevco	0.02344	g	2000	9/9/2003	Lt
HEDZR	Head Accel Z Red		7264-2000TZ	J26980		Endevco	0.03088	g	2000	9/9/2003	Up
NEKXF	Neck Force X		1716A	1716A-1535-FX		Denton	0.000186952	N	8896.4	9/9/2003	Hd Fd Cst Rr
NEKYF	Neck Force Y		1716A	1716A-1535-FY		Denton	0.000179612	N	8896.4	9/9/2003	Hd Lt Cst Rl
NEKZF	Neck Force Z		1716A	1716A-1535-FZ		Denton	0.000093678	N	13344.6	9/9/2003	Hd Up Cst Dn
NEKXM	Neck Moment X		1716A	1716A-1535-MX		Denton	0.005785841	N	282.5	9/9/2003	Rt Ear to Rt Shld
NEKYM	Neck Moment Y		1716A	1716A-1535-MY		Denton	0.00568	N	282.5	9/9/2003	Chtn to Simm
NEKZM	Neck Moment Z		1716A	1716A-1535-MZ		Denton	0.008186195	N	282.5	9/9/2003	Chtn to Lt Shld
LURYG	Left Upper Rib Y		7264C-2K-2-18	P27850		Endevco	0.01795	g	2000	9/9/2003	Rgt
LURYR	Left Upper Rib Red Y		7264C-2K-2-18	P25374		Endevco	0.02209	g	2000	9/9/2003	Rgt
LLRYG	Left Lower Rib Y		7264C-2K-2-18	P29211		Endevco	0.02096	g	2000	9/9/2003	Rgt
LLRYR	Left Lower Rib Red Y		7264C-2K-2-18	P25075		Endevco	0.01784	g	2000	9/9/2003	Rgt
T12YG	Lower Spine Y		7264C-2K-2-18	P21635		Endevco	0.01895	g	2000	9/9/2003	Lft
T12YR	Lower Spine Red Y		7264C-2K-2-18	P24564		Endevco	0.01896	g	2000	9/9/2003	Lft
PEVYG	Pelvis Accel Y		7264C-2K-2-18	P21652		Endevco	0.02221	g	2000	9/9/2003	Lft
PEVYR	Pelvis Accel Red Y		7264C-2K-2-18	P25318		Endevco	0.01926	g	2000	9/15/2003	Lft

FMVSS 214 SIDE IMPACT PROTECTION C45101 / 030924-1





SIDE IMPACTOR BARRIER CERTIFICATION

Date: May 13, 2003
To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION


Customer P.O. Number: 23413
Work Order Number: 16765
Quantity: 01 piece

CORE INFORMATION

Core Type: PCGA-1/4 5.2-P-3003-T
Measured Cell Size: 0.250 inches
Measured Density: 5.2 pcf

Unit Number: 033A0303

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 232 - 250 psi as per DWG# DSL-1285.

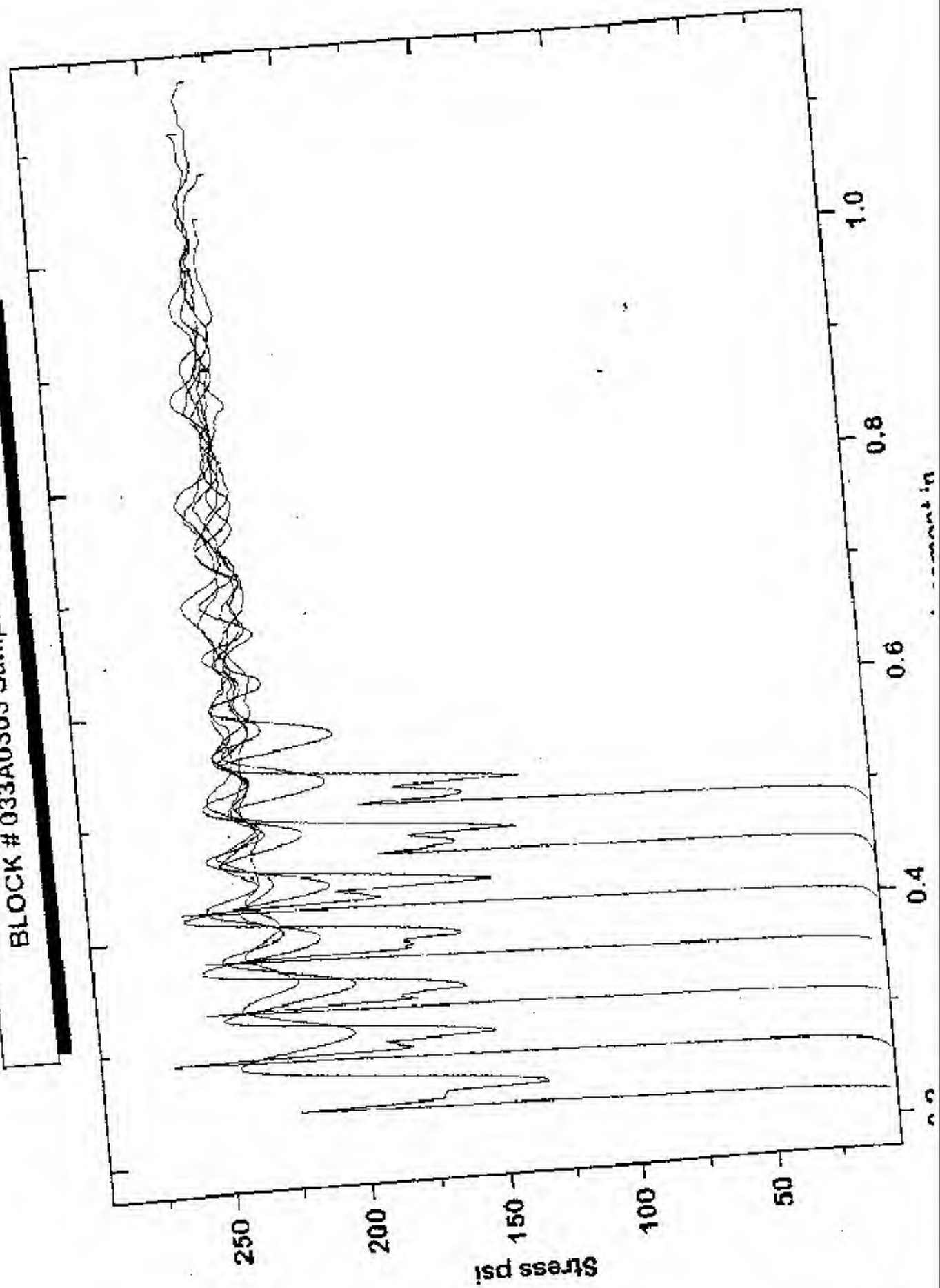

Quality Control Representative
Karl D. Zwaanstra



Crush Data**232 - 250 psi per DWG # DSL-1285****Block Number: 033A0303**

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	233.68	234.43	234.32
2	234.84	233.99	234.70
3	241.15	240.58	242.00
4	235.55	234.70	234.32
5	243.22	239.09	237.67
6	236.93	237.02	238.13
7	237.94	240.08	237.33

BLOCK # 033A0303 Sample ID: IN267010





SIDE IMPACTOR BARRIER CERTIFICATION

Date: May 13, 2003
To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

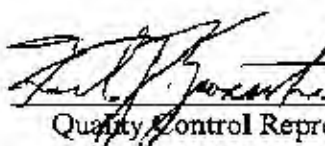
Customer P.O. Number: 23413
Work Order Number: 16765
Quantity: 01 piece

CORE INFORMATION

Core Type: PAMG-3/8-1.6-001-P-5052-T
Measured Cell Size: 0.375 inches
Measured Density: 1.6 pcf

Unit Number: 024A0403

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 45 psi +/- 2.5 psi as per DWG# DSL-1285.


Quality Control Representative
Karl D. Zwaanstra



Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: 024A0403

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	44.04	43.50	44.74
2	47.22	47.11	46.31
3	45.50	45.66	45.35
4	45.47	46.98	46.34
5	47.25	46.24	45.37
6	44.54	44.24	43.37
7	44.12	43.94	42.84

BLOCK # 024A0403 Sample ID: IN227200

